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Robert L. Glicksman

George Washington University Law School, rglicksman@law.gwu.edu

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SUSTAINABLE FEDERAL LAND MANAGEMENT: PROTECTING ECOLOGICAL INTEGRITY AND PRESERVING ENVIRONMENTAL PRINCIPAL

Robert L. Glicksman *

I. INTRODUCTION

The concept of sustainability plays a central role in environmental regulation¹ and natural resource management.² Despite the concept's importance to the planning and implementation of environmental policy, its meaning remains elusive. One problem in coming to grips with the significance of sustainability in environmental law and policy is its appearance in several guises. In the context of international environmental law, the goal of achieving sustainable development has been paramount for at least two decades.³ The multiple use federal land management agencies, like the United States Forest Service and the Bureau of Land Management (BLM), have long been obliged to manage the lands and resources they control in accordance with the principles of multiple use and sustained yield.⁴ In other contexts, sustainability is used as an unadorned, freestanding noun, instead of as an adjective that modifies some other term.⁵ These formulations are not necessarily synonymous.⁶ In addition, regardless of the formulation, sustainability

* Robert W. Wagstaff Professor of Law, University of Kansas. I thank Richard E. Levy, Andrew Torrance, Sid Shapiro, and Bill Funk for the valuable analytical input they provided. I also thank Mary Wood for sharing her insights and for her willingness to explore the implications of public trust law for public land management with me. I thank Jamie Grodsky for going above and beyond the call of duty in making suggestions that were essential to the editing process and the crafting of the final version of the article. Finally, I thank the faculty at The George Washington University Law School for useful feedback provided at a presentation to the faculty.

1. See *Environmental Law for Sustainability: Environmental Law for Sustainability: A Reader* 11 (Benjamin J. Richardson & Stepan Wood eds., Hart Publg. 2006) (asserting that during the 1990s, there was "a transformation in the central goal of environmental regulation, from environmental protection to 'sustainable development.' . . . Based on conceiving economic prosperity as dependent on maintenance of environmental health, sustainable development is perhaps the most significant normative influence on environmental regulation today.") [hereinafter *Environmental Law*].

2. See Comm. of Scientists, *Sustaining the People's Lands: Recommendations for Stewardship of the National Forests and Grasslands into the Next Century* 13 (Mar. 1999) [hereinafter *Scientists*] ("Today, sustainability is widely recognized as the overarching objective of land and resource stewardship.").

3. See *infra* nn. 26–55 and accompanying text.

4. See generally 16 U.S.C. § 529 (2006); *id.* at § 1604(e)(1); 43 U.S.C. § 1701(a)(7) (2006); *id.* at 1712(c)(1) (2006).

5. See *e.g.* *Scientists*, *supra* n. 2, at 14 (stating that "[t]he term sustainability has come into widespread use in relatively recent times").

6. See *e.g.* *Environmental Law*, *supra* n. 1, at 13 (stating that "'sustainability' and 'sustainable development' are not synonymous").

may have ecological, economic, and social components.⁷

The result of this proliferation of terms relating to sustainability has been dissatisfaction with its use as a guiding principle of environmental policy.⁸ The various formulations of sustainability have been criticized as, among other things, vague,⁹ slippery,¹⁰ oxymoronic,¹¹ a “mask[er] [of] failed consensus,”¹² and a reflection of political correctness.¹³ Further, according to some scholars, the amorphous nature of sustainability saps it of much of the normative power it might otherwise have.¹⁴ Others have suggested that the concept of sustainability becomes more useful if it is viewed as operating at two levels. First, it functions as a “broad social objective,”¹⁵ a “higher-order social goal,” or “a fundamental property of natural or human systems.”¹⁶ At this level, the core value of sustainability is intergenerational equity.¹⁷ The objective of sustainability is to prevent current resource use from damaging the opportunities of future generations. Second, it may be useful on a more concrete level as a resource

7. See Charles F. Wilkinson, *A Case Study in the Intersection of Law and Science: The 1999 Report of the Committee of Scientists*, 42 Ariz. L. Rev. 307, 313 (2000) (“The accepted formulation is that the objective is to sustain ecological, economic, and social values.”).

8. According to Professor Douglas Kysar, “the term has taken on a life of its own, finding diverse expression in all manner of environmental treaties, trade agreements, international aid programs, presidential council reports, state and local planning schemes, corporate mission statements, investment fund charters, NGO policy documents, and so on.” Douglas A. Kysar, *Sustainable Development and Private Global Governance*, 83 Tex. L. Rev. 2109, 2115 (2005). He adds that, “[d]espite, or perhaps because of, this enormous degree of attention and apparent acceptance, the results of the sustainable development movement have been decidedly mixed, both in terms of conceptual clarity and programmatic success.” *Id.*

9. See Scientists, *supra* n. 2, at 13 (describing the term as “so vague that it eludes definition [and] is impossible to define . . . in a generic fashion that applies across the board to all natural systems”); see also David M. Driesen, *Sustainable Development and Market Liberalism’s Shotgun Wedding: Emissions Trading under the Kyoto Protocol*, 83 Ind. L.J. 21, 29 (2008) (“Definitions of the concept [of sustainable development] vary and many scholars lament its lack of precision.”); *Environmental Law*, *supra* n. 1, at 13–14 (“Many see sustainable development as riddled with ambiguity and contradictions that undermine its usefulness.”).

10. “The still slippery concept of sustainable development continues as the contemporary resource use paradigm.” Helen Endre-Stacy, *Sustaining ESD in Australia*, 69 Chi.-Kent L. Rev. 935, 935 (1994).

11. “Some have argued that the term sustainable development is oxymoronic (how can development, as change, be sustainable), or so general as to be meaningless.” Edith Brown Weiss et al., *International Environmental Law and Policy* 45 (2d ed., Aspen Publishers 2007).

12. Christopher D. Stone, *Deciphering “Sustainable Development,”* 69 Chi.-Kent L. Rev. 977, 978 (1994). Stone adds: “‘Sustainable development’ functions to gloss over not only failed consensus, but a latent collision course. The chasm is less a failure of language . . . than a poignant tussle between, roughly, Rich and Poor.” *Id.*

13. Emily Fisher, *Sustainable Development and Environmental Justice: Same Planet, Different Worlds?* 26 *Environ. Envtl. L. & Policy* J. 201, 201 (2002).

14. See John Martin Gillroy, *Adjudication Norms, Dispute Settlement Regimes and International Tribunals: The Status of “Environmental Sustainability” in International Jurisprudence*, 42 Stan. J. Intl. L. 1, 2 (2006) (referring to “a number of competing and even contradictory sub-principles which dilute and dissipate its normative power to command the construction and operation of an institutional dispute resolution regime of its own”). Cf. *Environmental Law*, *supra* n. 1, at 13 (arguing that “sustainability remains essentially a contested discourse rather than a set of reified policy concepts and management procedures”).

15. Scientists, *supra* n. 2, at 13 (concluding that “sustainability has great appeal as a broad societal objective, as a symbol of the fundamental values we hold as a people”); see Wilkinson, *supra* n. 7, at 313.

16. *Environmental Law*, *supra* n. 1, at 13. See also *id.* at 31 (asserting that “sustainability is best understood as a *higher order social goal* akin to other goals widely supported in a given society, such as democracy, equity, religious conformity, rule of law or justice” (emphasis in original)).

17. See Driesen, *supra* n. 9, at 29 (“Scholars studying sustainable development refer to the consideration of future generations’ needs under the rubric of intergenerational equity.”); Jaye Ellis & Stepan Wood, *International Environmental Law*, in *Environmental Law*, *supra* n. 1, at 377 (“One aspect of the discourse of equity that has attracted broad consensus among international lawyers is the proposition that sustainability rests on a commitment to respect the needs of future generations, ie, a commitment to inter-generational equity.”).

management tool, although its meaning at this level necessarily changes to accommodate the particular physical, economic, and social context in which it is being applied.¹⁸

The multiple meanings (or the lack of any useful meaning, depending upon one's point of view) of sustainability can cloud analysis of its import in environmental and natural resource management law. Fortunately, my aim in this Article is not to provide a universally applicable take on the meaning of sustainability. Instead, the Article explores the application of sustainability to management of lands and resources under the jurisdiction of the Forest Service and the BLM. These two agencies have operated for decades under a mandate to manage the public lands and resources for which they are responsible in a manner that achieves sustained yield. In this context, sustainability has operated to date primarily in an aspirational fashion, as a broad objective of public land management. For the most part, it has not functioned as a useful management tool or as an enforceable constraint on agency management discretion.

The purpose of this Article is to urge the adoption of amendments to the laws under which the Forest Service and the BLM operate to make them more consistent with the core function of sustainability—to ensure that the valuable environmental services provided by the lands and resources these agencies manage remain unimpaired for both present and future generations in the face of both natural disturbances and human use. In particular, the Article recommends that Congress recognize that federal lands and resources are held by the multiple use agencies in trust for the benefit of present and future generations and create a mechanism by which private citizens or public interest groups may sue the agencies if they waste trust assets or otherwise breach their fiduciary obligations to the American people. The Article explores what the agencies' core trust responsibilities should entail and provides examples of management standards that either Congress or the agencies might adopt to codify those obligations to assist judicial review of alleged breaches of fiduciary duty.

Part II of the Article discusses the development of the concept of sustainability in both international and U.S. domestic environmental and natural resource management law. Its discussion of domestic law focuses on the evolution of the sustained yield mandate that governs both the Forest Service and the BLM. It argues that, despite periodic overhauls to the federal land management laws to require protection of previously neglected environmental resources and values, the statutes continue (though less egregiously than before) to reflect a tilt toward a commodity production orientation that gives short shrift to the maintenance of environmental sustainability. Part III addresses the implementation of the statutory sustained yield mandate by the Forest Service and the BLM. It demonstrates that, even if the statutes appropriately temper the agencies' authority to authorize commodity production and resource extraction with the responsibility to ensure sustainability, Congress has failed to translate the inspirational goal of protecting sustainability into a meaningful and enforceable mandate by which the Forest Service and the BLM may be held accountable.

Part IV develops the argument that Congress should transform the obligations of the multiple use agencies by creating a natural resource trust whose purpose is to assure that the trust assets (the lands and resources managed by the Forest Service and the

18. See Scientists, *supra* n. 2, at 13–14.

BLM) are sufficiently healthy and resilient that they continue to generate valuable ecosystem services that benefit present and future generations, notwithstanding natural disturbances and human use. The trust mechanism explored here is modeled after natural resource trust arrangements that exist or that have been proposed in other contexts. First, the common law system of estates and future interests imposes obligations on current users to preserve property value for the benefit of future interest holders. The specific nature of the rights of present and future interest holders is often specified in trust arrangements, which also impose enforceable fiduciary duties on trustees who represent the interests of the holders of equitable present and future interest holders. Second, the courts in this country have long recognized that the states hold certain natural resources in trust, although the scope of the trust and the nature of the fiduciary obligations it creates continue to be disputed. This state public trust doctrine (which currently derives from a combination of common law, statute, and constitutional provisions) has never taken root in the federal land management arena. Third, Congress has created, or the courts have recognized the existence of, trust responsibilities in limited federal lands contexts. The clearest example is the trust responsibilities that bind the federal government in the management of Indian lands, but federal pollution control statutes also create trust obligations for agencies that manage certain polluted resources. Congress has never extended trust protections, however, to federal lands in general or to the lands managed by the Forest Service and the BLM in particular. Finally, and perhaps of most direct relevance here, other scholars—notably Edith Brown Weiss—have argued that the use of trust concepts in the international environmental law context is a useful device for promoting intergenerational equity.

This Article extends the trust concept beyond these areas by applying it to domestic federal public natural resources law in ways that current law does not accomplish. Under the trust mechanism recommended here, the multiple use agencies would be designated as trustees, obliged to manage the lands and resources they control for the continued benefit of present and future generations. The agencies would be allowed to expend the “income” generated by the resources under their control, but they would be prohibited from invading the “principal” of the trust corpus or from otherwise wasting trust assets. The legislation creating the trust also would authorize lawsuits against the agencies for breach of fiduciary duty to prevent them from invading “ecological principal” or to force them to restore improperly damaged trust assets.

Part IV below recognizes that a vague mandate to avoid waste or to protect the natural resources that comprise the trust corpus is not likely to suffice to create the kind of accountable mechanism for protecting sustainability that the federal land management laws currently lack. Accordingly, that part provides examples of the kinds of specific substantive standards that might be useful in defining the responsibilities of the trustees in managing the lands and resources entrusted to their care. It points to the certification processes created by the Forest Stewardship Council and the Fisheries Stewardship Council, coalitions of non-governmental organizations that promote sustainable forest and fisheries management, as possible models for transforming sustainability from an aspirational objective to an enforceable mandate to which the Forest Service and the BLM can be held accountable when they make specific resource management decisions.

II. THE ROLE OF SUSTAINABILITY IN INTERNATIONAL AND DOMESTIC ENVIRONMENTAL LAW

The concept of sustainability plays perhaps its most prominent role in international environmental law, which, since the 1980s, has focused on the achievement of sustainable development. But versions of sustainability are also woven into the fabric of domestic environmental law, particularly the laws governing public natural resource management. This Part traces the development of the concept of sustainability in both contexts and identifies some of the common threads and disparities reflected in the use of different variations of the term. The detailed analysis of the provisions of the organic statutes of the multiple use agencies that follows is designed to explain why the version of sustainable resource use that governs management of the multiple use federal lands is much weaker than the international law version of sustainability. In particular, the statutory multiple use version of sustainability is more susceptible to interpretations that prioritize short-term commodity development at the expense of protection of long-term resource value. The organic statutes for the Forest Service and the BLM continue to reflect this weak domestic version of sustainability despite a series of overhauls through which Congress sought to strengthen protection of conservation values. The function of the science-based standards and trust concepts proposed in Part IV is to provide a series of enforceable mandates by which the Forest Service and the BLM may be held accountable if they deviate from their obligations to protect ecosystem services for the long as well as the short term.

A. *The Importance of Sustainability*

The purpose of this Article is not to provide a complete analysis of the value of achieving sustainable natural resource use and development. Nevertheless, the relationship between ecological degradation and social and economic vitality has perhaps never been clearer than it is now, both on and off the federal lands.¹⁹ The breakdown of natural systems that has already occurred or is expected to occur as a result of global climate change is providing stark examples on a regular basis. Unless greenhouse gas emissions are significantly reduced, populated parts of the globe may become uninhabitable as a result of desertification,²⁰ flooding, or coastal inundation linked to climate change.²¹ The dislocation and loss of property that resulted from Hurricanes Katrina and Rita in 2005 reflect the social and economic disruption that even a couple of severe storms are capable of producing. Climate change is likely to increase temperatures and reduce water supplies in some areas, adversely affecting economies that are highly dependent on agricultural production.²² Rising temperatures will increase

19. Cf. Driesen, *supra* n. 9, at 29–30 (describing view that “proper economic development . . . will simultaneously protect the environment and aid poverty elimination and leads to support for governance reforms integrating economic development and environmental decision making,” so that “environmental policy and economic development [are] complimentary. . .”).

20. See Ramond P. Motha & Wolfgang Baier, *Impacts of Present and Future Climate Change and Climate Variability on Agriculture in the Temperate Regions: North America*, 70 *Climatic Change* 137, 160 (2005).

21. See generally Robert L. Glicksman, *Global Climate Change and the Risks to Coastal Areas from Hurricanes and Rising Sea Levels: The Costs of Doing Nothing*, 52 *Loy. L. Rev.* 1127 (2006).

22. See e.g. *Climate Change 2007: The Physical Science Basis, Contribution of Working Group I to the Fourth Assessment of the Intergovernmental Panel on Climate Change* 91 (copy on file with author)

the risk of wildfires in the west, with attendant property losses and a decline in the amount of harvestable timber that is available to loggers.²³ Drought conditions and changes in vegetation patterns in the American West that are linked to climate change bode ill for ranchers, who might find it impossible to sustain range populations at their previous size.²⁴

The question this Article addresses is whether the statutes governing the multiple use lands managed by the Forest Service and the BLM mandate sustainable land and resource management, as this Article conceives of that term, and whether the statute is sufficient to hold the agencies accountable for adhering to the sustainability mandate. As the remainder of this part and Part III indicate, the organic statutes for the Forest Service and the BLM provide a more amorphous, and less environmentally protective take on sustainability than the international law version described immediately below.²⁵ Part IV of the Article describes how those statutes can be amended to provide greater assurance that public natural resources, such as the lands managed by the multiple use agencies, remain capable of providing valuable environmental services for present and future generations.

B. *International Environmental Law and Sustainable Development*

The earliest appearance of the term “sustainable development” in public environmental law discourse may have occurred in the *World Conservation Strategy*, a document prepared in 1980 by the International Union for Conservation of Nature and Natural Resources (IUCN).²⁶ The IUCN “defined sustainable development as ‘the integration of conservation and development to ensure that modifications to the planet do indeed secure the survival and well-being of all people.’”²⁷ The *Strategy* identified priority global conservation issues and proposed ways for dealing with them to achieve sustainable development.²⁸

Sustainable development took on added significance with the publication in 1987 by the World Commission on Environment and Development (WCED, also known as the Brundtland Commission) of its report, *Our Common Future*.²⁹ The WCED defined

(describing the likelihood that global warming will increase rainfall in the northeastern U.S., but reduce it in the southwest).

23. See e.g. Allianz Group & World Wildlife Fund, *Climate Change and Insurance: An Agenda for Action in the United States* 17–18 (Oct. 2006) (available at <http://www.worldwildlife.org/climate/Publications/WWFBinaryitem4913.pdf>); Kathleen A. Miller, *Climate Change and Water in the West: Complexities, Uncertainties, and Strategies for Adaptation*, 27 J. Land, Resources, & Envtl. L. 87, 89–90 (2007).

24. U.S. Govt. Accountability Off., *Climate Change: Agencies Should Develop Guidance for Addressing Effects on Federal Land and Water Resources* 33 (Aug. 2007) (available at <http://www.gao.gov/new.items/d07863.pdf>).

25. See George Cameron Coggins & Robert L. Glicksman, *Public Natural Resources Law* vol. 3, § 30:4 (2d ed., Thomson West 2007) (asserting that sustainability “is intended to be somewhat broader” than sustained yield).

26. Weiss et al., *supra* n. 11, at 44.

27. *Id.* (citing Intl. Union for Conserv. of Nat. and Nat. Resources, *World Conserv. Strategy: Living Resource Conserv. for Sustainable Dev.* (1980)).

28. *Id.*

29. *Our Common Future: The World Commission on Environment and Development*, UN Doc. A/42/47 (1987) (reprinted in *Our Common Future: The World Commission on Environment and Development* (Oxford U. Press, 1987) [hereinafter *Our Common Future*]).

sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”³⁰ According to the report, “sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs.”³¹ Sustainable development did not envision a halt to economic growth. Indeed, the WCED’s report asserted that the elimination of poverty and underdevelopment require a new era of economic growth.³² Further, the report recognized that “[e]conomic growth always brings risk of environmental damage, as it puts increased pressure on environmental resources.”³³ The aim of sustainable development would be “to assure that growing economies remain firmly attached to their ecological roots and that these roots are protected and nurtured so that they may support growth over the long term. Environmental protection is thus inherent in the concept of sustainable development, as is a focus on the sources of environmental problems rather than the symptoms.”³⁴

Our Common Future also addressed the impact of sustainable development on particular resources. It acknowledged that sustainable development implied limits resulting from current technologies and social organization, as well as the planet’s ability to absorb the effects of human activities.³⁵ Under a regime of sustainable development, development of renewable resources would have to take into “account system-wide effects of exploitation.”³⁶ The pace of use of nonrenewable resources such as minerals and fossil fuels would be managed to ensure that those resources do not run out before the discovery of acceptable substitutes.³⁷ Because species loss is irreversible, sustainable development requires the conservation of plant and animal species.³⁸ It also requires minimization of the adverse impacts of development on air and water quality so that “the ecosystem’s overall integrity” is not impaired.³⁹

The report identified as the “common theme throughout [its] strategy for sustainable development . . . the need to integrate economic and ecological considerations in decision making.”⁴⁰ It characterized that strategy “[i]n its broadest sense” as the promotion of “harmony among human beings and between humanity and nature.”⁴¹ Among the prerequisites for sustainable development it identified was “a production system that respects the obligation to preserve the ecological base for

30. *Id.* at 43. The report added that the term “contains within it two key concepts: the concept of ‘needs,’ in particular the essential needs of the world’s poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs.” *Id.*

31. *Id.* at 9.

32. *Id.* at 40.

33. *Our Common Future*, *supra* n. 29, at 40.

34. *Id.*

35. *Id.* at 8.

36. *Id.* at 45.

37. *Id.* at 45–46. “Sustainable development requires that the rate of depletion of non-renewable resources should foreclose as few future options as possible.” *Our Common Future*, *supra* n. 29, at 46.

38. *Id.* at 46.

39. *Id.*

40. *Id.* at 62.

41. *Id.* at 65.

development.”⁴² Finally, the report justified its strategy for achieving sustainable development on both utilitarian and moral grounds: “If needs are to be met on a sustainable basis the Earth’s natural resource base must be conserved and enhanced. . . . However, the case for the conservation of nature should not rest only with development goals. It is part of our moral obligation to other living beings and future generations.”⁴³

The WCED report laid the groundwork for the formal incorporation of sustainable development into several of the principles set forth at the 1992 UN Conference on Environment and Development in Rio de Janeiro. Principle 1 of the Rio Declaration on Environment and Development declared that human beings are at the center of sustainable development concerns and that “[t]hey are entitled to a healthy and productive life in harmony in nature.”⁴⁴ Principle 3 drew upon the concern of the Brundtland Commission for the welfare of future generations. It declared that the “right to development” had to be fulfilled in a way that equitably meets both the “developmental and environmental needs of present and future generations.”⁴⁵ According to Principle 4, “[i]n order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.”⁴⁶ Finally, Principle 8 called on states to “reduce and eliminate unsustainable patterns of production and consumption” in order to achieve sustainable development and a higher quality of life for everyone.⁴⁷

In the wake of the Rio Conference, sustainable development became a bedrock objective of international environmental law, even though some international environmental law specialists interpret the Rio Declaration as subordinating environmental protection to the right to develop.⁴⁸ These experts, however, continue to disagree on precisely what sustainable development means.⁴⁹ One account breaks down sustainable development into four principal characteristics, including protection of essential environmental (or ecosystem) services,⁵⁰ while another delineates five principal aims at “the core of the still-emerging sustainable development paradigm.”⁵¹ Yet

42. *Our Common Future*, *supra* n. 29, at 65.

43. *Id.* at 57.

44. *Rio Declaration on Environment and Development* Principle 1 (June 14, 1992), 31 I.L.M. 874, 876.

45. *Id.* at 877.

46. *Id.*

47. *Id.*

48. See John S. Applegate & Alfred C. Aman, Jr., *Introduction: Syncopated Sustainable Development*, 9 Ind. J. Global Leg. Stud. 1, 3 (2001) (“In short, Rio replaced a right to a healthy environment with a right to develop, and environmental protection was relegated to a distinctly secondary status.”).

49. See Gillroy, *supra* n. 14, at 14 (quoting Philippe Sands, *International Law in the Field of Sustainable Development*, 65 British Y.B. Intl. L. 303, 379 (1994)) (“[S]ustainable development’ is now established in international law, even if its meaning and effect are uncertain.”). In addition, not all nations, including signatories to the Rio Declaration and other international agreements endorsing sustainable development, have been equally committed to practicing it. See e.g. A. Dan Tarlock, *Ideas Without Institutions: The Paradox of Sustainable Development*, 9 Ind. J. Global Leg. Stud. 35, 38–39 (2001) (“As it now does on all international environmental protection issues, the United States lags behind many parts of the world in its commitment to SD.”).

50. Weiss et al., *supra* n. 11, at 46–47. The others are the obligation of those responsible for development to consider “intergenerational equity,” the obligation to pursue development that meets the “needs of the world’s poor” (“intragenerational equity”), and integration of “environmental, economic, and social issues.” *Id.*

51. Kysar, *supra* n.8, at 2116. These are “integrated policy assessment, environmental sustainability, intragenerational equity, [meaningful] political participation, and intergenerational responsibility.” *Id.* (citing

another version of sustainability finds that it reflects eight “sub-principles,” four “substantive” ones and four “procedural” ones.⁵² In particular, there appear to be two conflicting versions of sustainability. International law experts distinguish between “hard” and “soft” versions of sustainability, one of which has more bite as a binding legal norm than the other. Professors Applegate and Aman have explained that “[t]he hard version would impose real restrictions on the nature and extent of development in the name of sustainability. The soft version treats sustainable development as a set of very general guidelines or goals, a position reinforced by the essentially hortatory nature of the international instrument that first formally adopted it.”⁵³

Yet, these disparate accounts of what sustainable development means seem to coalesce around a common foundation. Professor Douglas Kysar describes these two core attributes of sustainable development as follows:

Perhaps the most widely accepted meaning of sustainable development is that there is some obligation to consider and protect the interests of future generations in relation to the natural environment. This responsibility usually is translated as a “need to preserve natural resources for the benefit of future generations.” . . . More broadly, the framework also demands that present generations avoid disrupting the basic integrity of those ecological systems upon which all life and human activity are thought to depend. Recognizing that the earth’s vital biophysical processes are characterized by uncertainty, irreversibilities, critical thresholds, and other hallmark features of complex, dynamic systems, proponents of sustainable development argue that present generations should establish “safe minimum standards . . . for protecting Earth’s life-support systems in the face of virtually inevitable unpleasant surprises.”⁵⁴

Thus, sustainable resource use entails a commitment on the part of the present generation to protect the interests of future generations by avoiding the disruption of the basic integrity of ecological systems upon which life depends.⁵⁵

This conception of sustainability is comprehensible only if one defines the concept of ecological integrity. Ecological integrity is protected if “the capacity of the Earth’s ecosystems [can] continue functioning so that the environmental services, upon which

Ltr. from the Permanent Representative of Bangladesh to the United Nations and the Chargé d’affaires of the Permanent Mission of the Netherlands to the Secretary-General of the United Nations (Aug. 6, 2002), UN GAOR, 57th Sess., Provisional Agenda Item 89, at 3, UN Doc. A/57/329 (2002)).

52. Gillroy, *supra* n. 14, at 12. The four “substantive principles” are “the prevention principle,” “the precautionary principle,” “sovereignty over internal resources combined with a duty not to pollute across territorial borders, and . . . the right to equitable development, which represents the resource economics definition of sustainability.” *Id.* The four “procedural principles” of sustainable development are “(1) the integration of environment and development, (2) a concern for future generations and their welfare, (3) the principle of common but differentiated responsibility, and (4) the polluter-pays principle.” *Id.*

53. Applegate & Aman, *supra* n. 48, at 2–3. See also *Environmental Law*, *supra* n. 1, at 14 (stating that weak sustainability “aims essentially to make our political and economic systems more ‘environmentally sensitive’, but without any fundamental institutional change,” while strong sustainability “demands radical institutional and policy changes in order to maintain the total stock of natural capital including biological diversity, as well as ethical and cultural change as against mere technological and managerial solutions.”).

54. Kysar, *supra* n. 8, at 2118–19 (quoting Philippe Sands, *Principles of International Environmental Law* 253 (2d ed., Cambridge U. Press 2003); accord Paul R. Ehrlich, *Ecological Economics and the Carrying Capacity of Earth*, in *Investing in Natural Capital: The Ecological Economics Approach to Sustainability* 38, 49 (AnnMari Jansson et al. eds., Is. Press 1994)).

55. Cf. *Our Common Future*, *supra* n. 29, at ch. 1, ¶ 14 (recognizing that sustainability requires measures to preclude impairment of “the ecosystem’s overall integrity”).

the well-being of all life depends, are maintained indefinitely.”⁵⁶ The environmental services provided by well-functioning ecological systems include purification of air and water, detoxification and decomposition of waste, renewal of soil fertility, regulation of climate, mitigation of droughts and floods, pest control, pollination of plants, proliferation of game and beneficial non-game species, recreational benefits, and cultural and aesthetic qualities.⁵⁷ The capacity of an ecosystem to continue to provide these services depends on its resilience in the face of both natural disturbances and human use. Thus, a resilient ecosystem is one whose well-functioning natural capacity for self-maintenance and self-regeneration allows it to continue to function.⁵⁸ The goal of protecting ecosystem integrity is “not to keep things as they are, or to constrain ecosystems within historical bounds, but rather to *retain the capability of the ecosystem to adapt*,”⁵⁹ given that ecosystems are dynamic rather than stable.⁶⁰ In short, the goal of sustainable land and resource management is to ensure that the ability of the managed ecosystems to continue to provide the valuable environmental services they currently provide remains unimpaired, notwithstanding natural disturbances and human use.⁶¹

C. *The Amorphous Multiple Use and Sustained Yield Statutes*

The version of sustainability reflected in the laws that govern land and resource management by the Forest Service and the BLM is sustained yield. As George Coggins explained several years after the adoption of the organic statutes for those two agencies,

56. Prue Taylor, *The Business of Climate Change: What's Ethics Got to Do with It?* 20 P. McGeorge Global Bus. & Dev. L.J. 161, 192 (2007). An ecosystem is “a functional unit of physical and biological organization” with “recognized boundaries [and] some degree of internal homogeneity.” Eugene Odum, *The Emergence of Ecology as a New Discipline*, 195 Sci. 1289, 1289–93 (1977) (quoted in Jan G. Laitos et al., *Nat. Resources L.* 74 (Thomson West 2006)). On the role of ecosystem services, see generally James Salzman, Barton H. Thompson, Jr. & Gretchen Daily, *Protecting Ecosystem Services: Science, Economics, and Law*, 20 Stan. Envtl. L.J. 309, 310 (2001); James Salzman, *Valuing Ecosystem Services*, 24 Ecol. L.Q. 887 (1997); J.B. Ruhl & James Salzman, *The Law and Policy Beginnings of Ecosystem Services*, 22 J. Land Use & Envtl. L. 157 (2007).

57. Laitos et al., *supra* n. 56, at 75; Salzman, Thompson & Daily, *supra* n. 56, at 310.

58. Taylor, *supra* n. 56, at 192. Taylor adds that “[t]he impact of present behavior and the potential impact of future behavior give rise to the need to protect and conserve. Additionally, the impact of past human behavior gives rise to the need to restore and rehabilitate ecological systems.” *Id.*

59. Annecoos Wiersema, *A Train without Tracks: Rethinking the Place of Law and Goals in Environmental and Natural Resources Law*, 38 Envtl. L. 1239, 1258 (2008) (quoting *Preface to Ecosystem Function & Human Activities: Reconciling Economics and Ecology* xiii (R. David Simpson & Norman L. Christensen, Jr. eds., Intl. Thomson Publg. 1997) (emphasis in original)).

60. See generally Judy L. Meyer, *The Dance of Nature: New Concepts in Ecology*, 69 Chi.-Kent L. Rev. 875 (1994).

61. Cf. Laitos et al., *supra* n. 56, at 75 (“Ecosystem management emphasizes the ecological health and integrity of interacting components of ecosystems, including their resiliency, stability, elasticity and persistence.”); Bryan G. Norton, *A New Paradigm for Environmental Management*, in *Ecosystem Health: New Goals for Environmental Management* 25 (Robert Costanza et al. eds., 1992) (quoted in Laitos et al., *supra* n. 56, at 108); A. Dan Tarlock, *Putting Rivers Back in the Landscape: The Revival of Watershed Management in the United States*, 14 Hastings W.-N.W. J. Envtl. L. & Policy 1059, 1066 (2008) (arguing that protection of the ecological integrity of a river “is not a simple river preservation concept, but rather one that advocates integrating human use of a river system with the maintenance of its natural environmental sustainability”); Wiersema, *supra* n. 59, at 1260 (stating that “if we say we want to maintain ecosystem integrity, we can find out what connections are being disrupted and work on maintaining them”). The Fish and Wildlife Service, the agency responsible for implementing the Endangered Species Act and for managing the national wildlife refuges, has defined ecological integrity as “a condition determined to be characteristic of an ecosystem that has the ability to maintain the function, structure, and abundance of natural biological communities, including rates of change in response to natural environmental variation.” 50 C.F.R. at § 404.3.

sustained yield, and its frequent partner, multiple use, provide a standard that, “[i]n spite of its . . . popularity, . . . is neither widely understood nor consistently applied in practice.”⁶² Unfortunately, that assessment continues to be accurate.

1. The Origins of Sustained Yield

The sustained yield mandate reflected in the current organic statutes for the Forest Service and the BLM dates back at least as far as the late 1800s. In the 1890s, before the adoption of the Organic Act of 1897,⁶³ Bernhard Fernow, the Chief of the Division of Forestry within the Department of Agriculture, stressed the importance of maintaining the future productivity of the national forests, and especially the timber they produce.⁶⁴ According to Fernow, “[t]wo considerations must always be kept in view in [timber] management, namely, the needs of the consumer and the condition, present and prospective, of the reserve. The former should never be satisfied to the detriment of the latter, but all reasonable wants should be satisfied as far as possible.”⁶⁵

Based on this philosophy, the Division proposed a multiple use and sustained yield policy for managing the national forests that focused on water flow and timber supply, although the emphasis was economic, not preservationist in orientation.⁶⁶ The instructions provided to local forest rangers by Gifford Pinchot, upon becoming Chief of the Forest Service, reflected this same utilitarian bent:

The most vital question concerning the removal of any living timber is whether it can be spared. To decide this question the approving officer must know whether another growth of timber will replace the one removed or whether the land will become waste, whether the water supply will suffer, and whether the timber is more urgently needed for some other purpose. One of the foremost points to be studied is the reproduction of the forest under various conditions. Wherever possible a stand of young, thrifty trees should be left to form the basis for a second crop. Good reproduction and in mixed forests reproduction of the more valuable species must be assured before a sale can be recommended.⁶⁷

The concept of sustained yield was first codified in the Sustained-Yield Act of 1944.⁶⁸ The statute sought “to promote the stability of forest industries, of employment, of communities, and of taxable forest wealth.”⁶⁹ As Professor Michael Blumm has indicated, the clear function of the mandate was “sustaining timber harvests, not sustaining timber resources.”⁷⁰ “Even though Congress assumed that a sustained yield

62. George Cameron Coggins & Parthenia Blessing Evans, *Multiple Use, Sustained Yield Planning on the Public Lands*, 53 U. Colo. L. Rev. 411, 411–12 (1982). See generally George Cameron Coggins, *Of Succotash Syndromes and Vacuous Platitudes: The Meaning of “Multiple Use, Sustained Yield” for Public Land Management*, 53 U. Colo. L. Rev. 229 (1982).

63. 16 U.S.C. §§ 473–481 (2006) (repealed in part 1976). The 1897 statute “defined the basic purposes of national forest management.” Coggins & Glicksman, *supra* n. 25, at § 6:17.

64. Charles F. Wilkinson & H. Michael Anderson, *Land and Resource Planning in the National Forests*, 64 Or. L. Rev. 1, 47 (1985).

65. *Id.* at 47–48 n. 233 (quoting Rpt. of the Chief of the Div. of Forestry, *Report of the Sec. of Agric.*, H.R. Exec. Doc. 1 pt. 6 52-1 at 224 (1891)).

66. *Id.* at 48 n. 238.

67. *Id.* at 133 (quoting Forest Serv., U.S. Dept. of Agric., *The Use Book* 43 (1907 ed.)).

68. Act of Mar. 29, 1944, 58 Stat. 132. For a description of the statute, see James L. Huffman, *A History of Forest Policy in the United States*, 8 Env'tl. L. 239, 274 (1978).

69. Act of Mar. 29, 1944, 58 Stat. at 132.

70. Michael C. Blumm, *Public Choice Theory and the Public Lands: Why “Multiple Use” Failed*, 18 Harv.

of timber would also benefit” other forest resources, such as wildlife and watersheds, the 1944 Act amounted to an endorsement of timber production as the salient goal.⁷¹ Sustained yield meant the generation of a stream of commodity products.⁷²

2. The Multiple-Use, Sustained-Yield Act

In 1960, Congress adopted the Multiple-Use, Sustained-Yield Act (MUSYA),⁷³ which supplemented the 1897 Organic Act, but did not supersede it as the source of the Forest Service’s management authority.⁷⁴ MUSYA enunciates a congressional policy that the national forests be administered “for outdoor recreation, range, timber, watershed, and wildlife and fish purposes.”⁷⁵ The Act directs the Secretary of Agriculture “to develop and administer the renewable surface resources of the national forests for multiple use and sustained yield of the several products and services obtained therefrom. In the administration of the national forests due consideration shall be given to the relative values of the various resources in particular areas.”⁷⁶ It defines sustained yield to mean “the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land.”⁷⁷ One can read MUSYA to emphasize commodity production, not resource preservation. The word “yield” is evocative of tangible goods,⁷⁸ not the value of the natural ecosystem functions that undeveloped land provides.⁷⁹ So is the word “output.”⁸⁰

That reading is not inevitable. MUSYA includes outdoor recreation, watershed, and fish and wildlife among the purposes for which the national forests shall be administered, but only in the hortatory policy provision. The Act’s directive to the

Envtl. L. Rev. 405, 424 (1994).

71. *Id.*

72. *Id.* at 426 (arguing that “multiple use and sustained yield had a bias in favor of commodity production well in advance of the enactment of MUSYA”).

73. 16 U.S.C. §§ 528–531 (2006).

74. Coggins & Glicksman, *supra* n. 25, at § 30:1; 16 U.S.C. § 528 (“The purposes of sections 528 to 531 of this title are declared to be supplemental to, but not in derogation of, the purposes for which the national forests were established as set forth in section 475 of this title.”).

75. 16 U.S.C. § 528.

76. *Id.* at § 529.

77. *Id.* at § 531(b).

78. See *Am. Heritage Dictionary of the English Lang.* 1995 (4th ed., 2000) (defining “yield” as “[a]n amount yielded or produced; a product”) [hereinafter *Am. Heritage*]; Merriam-Webster, *Word Central*, <http://www.wordcentral.com> (accessed Apr. 28, 2009) (defining “yield” as “product: especially: the amount or quantity produced or returned”). The American Heritage online dictionary even defines “sustained yield” as either “[t]he continuing yield of a biological resource, such as timber from a forest, by controlled periodic harvesting” or “[t]he quantity of a resource harvested in this manner.” The *Am. Heritage Dictionary of the English Lang.*, www.bartleby.com/61/5/Y0020550.html (accessed Apr. 28, 2009) [hereinafter *Am. Heritage Online*].

79. American courts have a long history of emphasizing the value of land and natural resources for commodity production rather than for the ecological benefits they provide in their undisturbed state. See Alexandra B. Klass, *Adverse Possession and Conservation: Expanding Traditional Notions of Use and Possession*, 77 U. Colo. L. Rev. 283 (2006); John G. Sprankling, *The Anti-Wilderness Bias in American Property Law*, 63 U. Chi. L. Rev. 519 (1996); John G. Sprankling, *An Environmental Critique of Adverse Possession*, 79 Cornell L. Rev. 816 (1994).

80. The first two definitions of “output” in the American Heritage dictionary are “[t]he act or process of producing; production,” and “[a]n amount produced or manufactured during a certain time.” *Am. Heritage Dictionary*, *supra* n. 78, at 1250; *Am. Heritage Online*, *supra* n. 78, at <http://www.bartleby.com/61/57/O0165700.html>.

Forest Service is to manage the national forests to achieve sustained yield of the “products and services” obtained from the national forests. That mandate clearly includes ensuring a sustained yield of timber harvests and forage and easily accommodates efforts to achieve a continuous supply of fish and game for those engaged in fishing and hunting. The statute also ought to encompass management to protect the continuing vitality of ecosystem services,⁸¹ but that term was not developed until nearly four decades after MUSYA was adopted.⁸² It would have been more easily understood at the time MUSYA was adopted to include making the national forests available for recreational pursuits, one of the listed multiple uses. The statute also refers to the “values” of various forest resources, which would appear to encompass the ecological, historic, scientific, and even spiritual value of undeveloped forestland.⁸³ Further, the definition of multiple use provides that the Forest Service, in considering these values and seeking to avoid impairment of forest resources, need not achieve “the combination of uses that will give the greatest dollar return or the greatest unit output.”⁸⁴ But MUSYA only requires the agency to afford relative resource values “due consideration.”⁸⁵ The directive to “consider” these values reflects a weaker mandate than the decree that the Forest Service develop and administer renewable forest resources for sustained yield of their products and services.⁸⁶ The terminology of MUSYA’s sustained yield mandate, therefore, tilts toward commodity production rather than toward the protection of ecological integrity, one of the essential components of the core meaning of sustainability in the international law context described in Part II above.⁸⁷ As Professors Nagle and Ruhl have pointed out, “[g]iven their vastly different objectives, a commodity-based view of ecosystems is likely to adopt a much different metric for ecosystem management than will a preservation-based view.”⁸⁸

The other essential component of the international law concept of sustainability is the obligation of the present generation to protect the interests of future generations.⁸⁹

81. For references to discussions of the value of ecosystem services, see *supra* n. 56.

82. According to J.B. Ruhl, “the birth of ecosystem services as a big ‘new’ idea” occurred in 1997 when three influential works were published. J.B. Ruhl, *The Law and Policy Beginnings of Ecosystem Services*, 22 J. Land Use & Envtl. L. 157, 158 (2007) (citing *Nature’s Services: Societal Dependence on Natural Ecosystems* 3 (Gretchen C. Daily ed., Is. Press 1997); Graciela Chichilnisky & Geoffrey Heal, *Economic Returns from the Biosphere*, 391 Nat. 629 (Feb. 12, 1998); Robert Costanza et al., *The Value of the World’s Ecosystem Services and Natural Capital*, 387 Nat. 253 (May 15, 1997)).

83. The Wilderness Act, which was passed four years after MUSYA, defines wilderness, in part, by reference to the “ecological, geological, or other features of scientific, educational, scenic, or historical value[,]” which undeveloped federal land preserved in its primitive condition may provide. 16 U.S.C. § 1131(c)(4) (2006). See generally John Copeland Nagle, *The Spiritual Values of Wilderness*, 35 Envtl. L. 955 (2005).

84. 16 U.S.C. § 531(a).

85. *Id.* at § 529. Professor Zellmer notes that, “[o]ther than this cryptic provision for ‘due consideration,’ however, MUSY [gives] little guidance to the agency for resolving conflicts among uses. . . .” Sandra Zellmer, *A Preservation Paradox: Political Prestidigitation and an Enduring Resource of Wilderness*, 34 Envtl. L. 1015, 1032 (2004).

86. See 16 U.S.C. § 529.

87. Cf. John Martin Gillroy, Breena Holland & Celia Campbell-Mohn, *A Primer for Law & Policy Design: Understanding the Use of Principle and Argument in Environmental and Natural Resources Law* 214 (Thompson/West 2000) (stating that “[c]urrent natural resource statutes,” including MUSYA and the NFMA, “reflect this definition of sustainability as another form of Kaldor efficiency”).

88. John Copeland Nagle & J.B. Ruhl, *The Law of Biodiversity and Ecosystem Management* 329 (2d ed., Found. Press 2006).

89. See *supra* n. 55 and accompanying text.

MUSYA does not refer to the interests of future generations explicitly. It does, however, define “sustained yield” in part as “maintenance in perpetuity” of the “renewable resources of the national forests without impairment of the productivity of the land.”⁹⁰ Those references encompass recognition that the Forest Service has an obligation to manage the national forests for the long as well as the short term.

3. The Insufficient Fix: The Two New Organic Acts of 1976

As the fledgling environmental protection movement began to emerge, some members of Congress voiced dissatisfaction with MUSYA’s vague resource management mandate. Congress did two things that year to lay the groundwork for the reorientation of federal land use priorities. First, it adopted the Classification and Multiple Use Act of 1964 (CMUA).⁹¹ The CMUA required the Secretary of the Interior to develop criteria for determining whether particular public lands should be disposed of, committed to community growth and other public uses, or retained and managed for multiple use and sustained yield.⁹² Second, it created the Public Land Law Review Commission⁹³ to review the public land laws and make recommendations for revisions to Congress and the President.⁹⁴ The Commission endorsed the fundamental principle that the federal government needed to “provid[e] responsible stewardship of the public lands and their resources.”⁹⁵ According to the Commission, this principle required that “[e]nvironmental values . . . be protected as major permanent elements of public land policy.”⁹⁶

In 1976, Congress adopted both the Federal Land Policy and Management Act (FLPMA)⁹⁷ and the National Forest Management Act (NFMA),⁹⁸ creating new organic acts for both the BLM and the Forest Service, respectively. As the remainder of Part II indicates, both statutes require management of federal lands and resources in accordance with the principles of multiple use and sustained yield. Both represent a movement away from the tilt toward commodity production reflected in the MUSYA and toward the protection of environmental values referred to by the Public Land Law Review Commission. Part III demonstrates, however, that neither statute is adequate to protect these values on federal lands. In particular, neither one contains management standards that are sufficient to preserve the capacity of those lands to provide a continued supply of ecosystem services. Neither one requires or is likely to achieve sustainability, as this Article conceives of that term.

90. 16 U.S.C. § 531(b). The definition of multiple use also includes the phrase “without impairment of the productivity of the land.” *Id.* § 531(a).

91. Pub. L. No. 88-607, 78 Stat. 986 (1964). That short-lived Act expired in 1970. Coggins & Glicksman, *supra* n. 25, at § 30:1.

92. Coggins & Evans, *supra* n. 62, at 449.

93. Pub. L. No. 88-606, 78 Stat. 982 (1964).

94. Jamison E. Colburn, *Habitat and Humanity: Public Lands Law in the Age of Ecology*, 39 *Ariz. St. L.J.* 145, 179 n. 141 (2007) (quoting Wayne N. Aspinall, *The Public Land Law Review Commission: Origins and Goals*, 7 *Nat. Research J.* 149, 149 (1967)).

95. Pub. Land L. Rev. Commn., *Report of the Public Land Law Review Commission: One Third of the Nation’s Land* 7 (June 1970).

96. *Id.*

97. Pub. L. No. 94-579, 90 Stat. 2744 (1976) (codified as amended at 43 U.S.C. §§ 1701–1785 (2006)).

98. Pub. L. No. 94-588, 90 Stat. 2949 (1976) (codified as amended at 16 U.S.C. §§ 1601–1687 (2006)).

a. The Federal Land Policy and Management Act

FLPMA enunciates a national policy that “goals and objectives be established by law as guidelines for public land use planning and that management be on the basis of multiple use and sustained yield unless otherwise specified by law.”⁹⁹ It mandates that, in developing and revising land use plans, the BLM “use and observe the principles of multiple use and sustained yield set forth in this and other applicable law.”¹⁰⁰ It also provides that the agency “shall manage the public lands under principles of multiple use and sustained yield, in accordance with the land use plans developed by [it] under [FLPMA] when they are available.”¹⁰¹

FLPMA’s definition of sustained yield is similar to the definition of that term in MUSYA. For purposes of FLPMA, sustained yield means “the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use.”¹⁰² The reference to output seems to continue the same commodity production orientation reflected in MUSYA. The statute’s definition of multiple use, however, pulls FLPMA in a different direction that is more consistent with the core components of the international law version of sustainability discussed above. Under FLPMA, multiple use means “management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present *and future* needs of the American people.”¹⁰³ In addition, multiple use under FLPMA entails “a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources.”¹⁰⁴ Both of those components of the definition of multiple use reflect the intergenerational equity concerns that play a prominent role in the meaning of sustainability under international law.

FLPMA also defines the renewable and nonrenewable resources that the BLM must manage, so as to achieve balance and diversity of uses, to include not only the resources referred to in MUSYA—outdoor recreation, range, timber, watershed, and wildlife and fish¹⁰⁵—but also “natural scenic, scientific and historical values.”¹⁰⁶ Finally, FLPMA differs from MUSYA by clearly stating that the uses encompassed by the definition of multiple use may include uses other than those identified in the statutory definition.¹⁰⁷ This inclusive provision is broad enough to include the value of preserving ecosystem integrity. It is not as clear, however, that FLPMA mandates resource management to that end. Finally, the FLPMA definition of multiple use differs subtly from the one in MUSYA in the portion of the definition that relates to impairment.

99. 43 U.S.C. § 1701(a)(7).

100. *Id.* at § 1712(c)(1).

101. *Id.* at § 1732(a). If a tract of land subject to the jurisdiction of the BLM has been dedicated to specific uses under other laws, such as the Wilderness Act, the BLM must manage that land in accordance with the other law, notwithstanding FLPMA’s multiple use, sustained yield mandate.

102. *Id.* at § 1702(h) (2006).

103. *Id.* at § 1702(c) (emphasis added).

104. *Id.*

105. 16 U.S.C. § 528.

106. 43 U.S.C. § 1702(c).

107. *See id.* (emphasis added) (providing that multiple use means “a combination of balanced and diverse resource uses . . . including, but not limited to” those set forth in the statutory definition).

MUSYA seeks to achieve “harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land.”¹⁰⁸ FLPMA defines multiple use to mean “harmonious and coordinated management . . . without permanent¹⁰⁹ impairment of the productivity of the land *and the quality of the environment*.”¹¹⁰

Careful parsing of FLPMA’s definitions of multiple use and sustained yield reflect differences from MUSYA’s definition of those terms. FLPMA creates a management regime, for the public lands administered by the BLM, which places a greater emphasis on the agency’s obligation to protect the interests of future generations. In addition, it replaces MUSYA’s emphasis on commodity protection with a conception of the long-term protection of the value of the public lands that better accommodates “natural” values, such as the maintenance of ecosystem integrity.¹¹¹

b. The National Forest Management Act

Congress also overhauled the organic act for the Forest Service by passing the National Forest Management Act of 1976.¹¹² The NFMA does not accomplish the same shift away from a commodity production orientation that FLPMA’s definitional provisions arguably do, or at least does not do so to the same extent.

The NFMA includes a finding that the national interest is served by a renewable resource program that is based on “a comprehensive assessment of present and anticipated uses, demand for, and supply of renewable resources from” the lands managed by the Forest Service.¹¹³ This management is to occur “through analysis of environmental and economic impacts, coordination of multiple use and sustained yield opportunities as provided in the [MUSYA].”¹¹⁴ To the extent that MUSYA reflects a bias toward commodity production, this cross-reference incorporates it into the NFMA as well. As if to reinforce that bias, the statute refers in another finding to the “capacity to produce goods and services” as a significant characteristic of the nation’s private forests and rangelands before endorsing the federal government’s role in encouraging

108. 16 U.S.C. § 531(a).

109. MUSYA lacks the reference to permanent impairment. On the one hand, the FLPMA version of multiple use may authorize a greater degree of short-term impairment, as long as permanent impairment does not occur. On the other hand, the reference to permanent impairment may reflect the concerns for intergenerational equity referred to earlier in the definition of multiple use.

110. 43 U.S.C. § 1702(c) (emphasis added). FLPMA’s definition of multiple use repeats the language in MUSYA that requires that the BLM “consider[]” “relative values of the resources,” but “not necessarily . . . the combination of uses that will give the greatest economic return or the greatest unit output.” *Id.* Cf. 43 U.S.C. § 1732(b) (requiring the BLM, in managing the public lands, to “take any action necessary to prevent unnecessary or undue degradation of the lands”).

111. Professor Zellmer notes the existence of debate over whether the multiple use, sustained yield standard as reflected in MUSYA, FLPMA, and the NFMA “has delivered on its promise of balancing the various interests in the public lands and sustaining the land and its resources for present and future generations. . . .” Zellmer, *supra* n. 85, at 1034. She argues that, due to provisions such as those discussed above, as well as relatively specific management standards in the NFMA for activities such as clearcutting, 16 U.S.C. § 1604(g)(3)(B), the multiple use, sustained yield standard “shows signs of having morphed beyond its production-oriented roots into something more like sustainable development, an overarching objective of international law norms.” Zellmer, *supra* n. 85, at 1019. *See also id.* at 1033, 1038.

112. Pub. L. No. 94-588, 90 Stat. 2949 (1976).

113. 16 U.S.C. § 1600(3).

114. *Id.*

and assisting private owners to achieve “the efficient long-term use and improvement of these lands and their renewable resources consistent with the principles of sustained yield and multiple use.”¹¹⁵ This finding seems to equate the production of goods and services with the desired efficiency that multiple use, sustained yield management is designed to achieve.

The NFMA declares congressional policy to be maintenance of all forested lands in the National Forest System “in appropriate forest cover with species of trees, degree of stocking, rate of growth, and conditions of stand designed to secure the maximum benefits of multiple use sustained yield management in accordance with land management plans.”¹¹⁶ It directs the Forest Service to engage in a multi-level planning process whose major function is forest management that is consistent with multiple use, sustained yield principles.¹¹⁷ One level entails establishing planning objectives over a forty-year horizon for all Forest Service activities.¹¹⁸ The resulting program must include recommendations, which “evaluate objectives for the major Forest Service programs in order that multiple-use and sustained-yield relationships among and within the renewable resources can be determined.”¹¹⁹

The NFMA requires the Forest Service, in developing and revising land and resource management plans for the national forests, to assure that those plans:

- (1) provide for multiple use and sustained yield of the products and services obtained therefrom in accordance with the [MUSYA], and, in particular, include coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness; and
- (2) determine forest management systems, harvesting levels, and procedures in the light of . . . the definition of the terms “multiple use” and “sustained yield” as provided in the [MUSYA], and the availability of lands and their suitability for resource management.¹²⁰

The Act directs the Forest Service to “take such action as will assure that the development and administration of the renewable resources of the National Forest System are in full accord with the concepts for multiple use and sustained yield of products and services as set forth in the [MUSYA].”¹²¹ It provides that the Forest Service “shall limit the sale of timber from each national forest to a quantity equal to or less than a quantity which can be removed from such forest annually in perpetuity on a sustained-yield basis.”¹²² To the extent that MUSYA places commodity production at the top of the list of land and resource management goals for the national forests, the NFMA’s incorporation of MUSYA’s definitions of multiple use and sustained yield codify that same bias.

Other, more specific substantive provisions of the NFMA cut in a more ecologically holistic direction. The statute requires the Forest Service to promulgate regulations “under the principles of the [MUSYA]” that govern the development and

115. *Id.* § 1600(5).

116. *Id.* § 1601(d)(1).

117. *See* Coggins & Glicksman, *supra* n. 25, at § 16:33.

118. *Id.*

119. 16 U.S.C. § 1602(5)(A).

120. *Id.* at § 1604(e).

121. *Id.* at § 1607.

122. *Id.* at § 1611(a).

revision of land and resource management plans.¹²³ These regulations require the agency to provide for diversity of plant and animal communities, but only “within the multiple-use objectives of a land management plan adopted” under MUSYA principles, and take steps to preserve the diversity of tree species similar to that existing in the region controlled by the plan, but only “to the degree practicable.”¹²⁴ The NFMA’s requirement that the Forest Service protect the diversity of plant and animal communities has been interpreted as an effort to achieve ecosystem-based management of the national forests.¹²⁵ But the multiple cross-references¹²⁶ to MUSYA weaken the force this provision might have in moving away from the commodity-production slant of the MUSYA’s conception of sustained yield toward a management regime whose hallmark is the protection of ecosystem integrity.

Other mandatory components of the Forest Service’s planning regulations reflect Congress’s desire to ensure that the Forest Service not manage the national forests solely on the basis of its traditional goal of “getting out the cut.”¹²⁷ The NFMA mandates that the Forest Service restrict the location of timber harvesting to insure that it will not irreversibly damage soil, slope, or other watershed conditions; that harvested lands can be restocked within five years; that harvesting will not seriously and adversely affect water conditions or fish habitat; and that the harvesting system not be “selected primarily because it will give the greatest dollar return or the greatest unit output of timber.”¹²⁸ It also restricts clearcutting and related timber harvesting practices, requiring, among other things, that these methods be carried out “in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, and esthetic resources, and the regeneration of the timber resource.”¹²⁹ All of these mandates, however, are circumscribed by the proviso that the Forest Service operate “under the principles of the [MUSYA.]”¹³⁰ Finally, the NFMA states that, in developing land use plans, the Forest Service must identify lands that are not suited for timber production, “considering physical, economic, and other . . . factors to the extent feasible . . . and shall assure that, except for . . . sales

123. *Id.* at § 1604(g).

124. 16 U.S.C. § 1604(g)(3)(B). For further discussion of the diversity mandate, see generally Robert L. Glicksman, *Bridging Data Gaps through Modeling and Evaluation of Surrogates: Use of the Best Available Science to Protect Biological Diversity Under the National Forest Management Act*, 83 Ind. L.J. 465 (2008).

125. See Glicksman, *supra* n. 124, at 489 (citing Robert B. Keiter, *Beyond the Boundary Line: Constructing a Law of Ecosystem Management*, 65 U. Colo. L. Rev. 293, 309–10 (1994)).

126. The introductory portion of 16 U.S.C. § 1604(g) refers to MUSYA, and 16 U.S.C. § 1604(g)(3)(B) refers to multiple-use (as defined by MUSYA) objectives twice more.

127. See William deBuys, *Visions of Western Governance: Powell and His Successors*, 23 J. Land, Resources, & Envtl. L. 15, 17–18 (2003) (arguing that even though “the Forest Service no longer follows Washington-based directives about ‘getting out the cut,’ . . . some of the characteristics of behavior born in those days still hamper the work of . . . the Forest Service”); Stephen L. Yaffee, *Lessons About Leadership from the History of the Spotted Owl Controversy*, 35 Nat. Resources J. 381, 394 (1995) (describing getting out this year’s cut as traditionally the most important goal of the leadership of the Forest Service). See generally Paul W. Hirt, *Getting out the Cut: A History of the National Forest Management in the Northern Rockies*, in *Northwest Lands, Northwest People* 437 (Dale D. Goble & Paul W. Hirt eds., 1999).

128. 16 U.S.C. § 1604(g)(3)(E)(iv).

129. *Id.* § 1604(g)(3)(F)(v). This provision is another reflection of the manner in which FLPMA represents a greater departure from MUSYA’s production-oriented conception of sustained yield than the NFMA does. The list of resources to be protected under the NFMA’s clearcutting restrictions does not include “natural scenic, scientific and historical values,” as FLPMA’s definition of multiple use does. 43 U.S.C. § 1702(c). In addition, the NFMA’s clearcutting provision does not provide, as the same FLPMA definition does, that the resources the agency is authorized to consider are not limited to those listed in the statute.

130. 16 U.S.C. § 1604(g) (introductory language).

necessitated to protect . . . multiple-use values, no timber harvesting shall occur on such lands for a period of 10 years.”¹³¹ The feasibility proviso obviously weakens this decree, and the cross-reference to MUSYA again precludes the Forest Service (or those protesting the agency’s actions) from achieving a clean break from MUSYA’s commodity-driven core.¹³²

One statutory provision governing the Forest Service has the potential to broaden the agency’s management mandate beyond that provided by MUSYA’s version of multiple use and sustained yield. The Forest and Rangeland Renewable Resources Planning Act of 1974 includes a provision in which “Congress declare[d] that the National Forest System consists of units of federally owned forest, range, and related lands throughout the United States and its territories, united into a nationally significant system *dedicated to the long-term benefit for present and future generations*.”¹³³ That provision, which is codified along with the land and resource planning provisions of the NFMA,¹³⁴ includes an explicit mandate to promote intergenerational equity. To that extent, it represents a step forward from MUSYA. In addition, the description of the National Forest System is not limited to products and services, as some of the provisions of the NFMA are,¹³⁵ and does not rely on a yardstick tied to output, as MUSYA’s definition of sustained yield does.¹³⁶ Instead, the reference to “long-term benefit” leaves room for the Forest Service to place greater emphasis on less quantifiable goals, including the benefits to present and future generations of preserving ecological integrity. The legislative history of this provision, however, explains that it is “in full accord with the concepts for multiple use and sustained yield of products and services as set forth in the Multiple-Use Sustained-Yield Act of 1960.”¹³⁷

131. *Id.* at § 1604(k).

132. For further discussion of the NFMA provisions summarized in this paragraph, see generally Coggins & Glicksman, *supra* n. 25, at §§ 16:52–16:59; Wilkinson & Anderson, *supra* n. 64, at 159–200.

133. Pub. L. No. 93-378, § 10, 88 Stat. 476 (1974) (emphasis added).

134. 16 U.S.C. § 1609(a).

135. *E.g. id.* at § 1600(5).

136. *Id.* at § 531(b).

137. S. Rep. 93-686 (Feb. 18, 1974) (reprinted in 1974 U.S.C.C.A.N. 4060, 4075). Other federal statutes, many but not all of which relate to federal land management, refer to sustainability or sustained yield. These laws are redolent with references to sustained yield. Yet, each either provides no definition of the term at all or simply refers to the MUSYA definition. See *e.g.* 16 U.S.C. § 460ff-3(f)(2) (zoning laws applicable to the Cuyahoga Valley National Park); *id.* at § 460l-22(b) (limitations on exchanges of timber lands in the national parks); *id.* at § 471f (establishment of the Pisgah National Forest); *id.* at § 471j(c) (acquisition of land for the Headwaters Forest and Elk River Property); *id.* at § 539d(a), (f) (providing timber from the Tongass National Forest); 16 U.S.C. § 580m (provision of timber supplies from reservoir areas of projects for flood control, navigation, hydroelectric power development); *id.* at § 583 (establishment of cooperative sustained-yield units consisting of federally owned or administered forest land); *id.* at § 583a (cooperative agreements with private owners of forest land within a cooperative sustained-yield unit); *id.* at §§ 583b to 583i (creation of sustained-yield unit consisting of forest land under the jurisdiction of the Secretary of Agriculture or Interior); *id.* at § 693b (establishment of the Robert S. Kerr Memorial Arboretum and Nature Center in the Ouachita National Forest); 16 U.S.C. §§ 698v to 698v-6 (establishment of the Valles Caldera National Preserve at the Baca Ranch).

The statutes that govern management of land by the federal government that is held in trust for Native Americans require that the federal government manage these lands in accordance with the principles of sustained yield. See *e.g.* 25 U.S.C. § 3104(b)(1), (3) (2006). See also *id.* at § 407 (sale of timber on unallotted Indian trust land); *id.* at § 466 (management of Indian forestry units); *id.* at § 564w-1 (management of the Klamath Indian Forest and Klamath Marsh); *id.* at § 632 (management of renewable resources on Navajo and Hopi lands); 25 U.S.C. § 3112(a) (requiring establishment of a program of technical assistance to Alaskan Native corporations to promote the sustained yield management of forest resources); *id.* at § 3702(1)

c. *The Incomplete Movement toward Sustainability*

The concept of sustained yield management originated in the early days of the Forest Service and took full flower with the adoption of MUSYA in 1960. Congress adopted FLPMA and the NFMA in the middle of the environmental decade when Congress's stated priorities shifted to afford greater weight to the benefits of protecting the environment and the nation's natural resource base.¹³⁸ Although those two laws represented a partial break with MUSYA's emphasis on protecting the ability of the federal lands to continue to produce commodities such as timber, key statutory provisions remain susceptible to interpretations that subordinate protection of ecological integrity to other, more commodity-driven goals. Accordingly, neither FLPMA nor the NFMA fully reconceptualized the sustained yield component of the basic management directive governing the BLM and the Forest Service.¹³⁹

In one respect, FLPMA represented a sharper break from the commodity-driven orientation of MUSYA than the NFMA did. Its definitions of multiple use and sustained yield, particularly the former, emphasize both intergenerational equity and ecosystem integrity protection components more than its MUSYA predecessors did. In another respect, the NFMA provides a greater opportunity for moving toward those goals by including more specific and binding guidance to the Forest Service on how to manage particular resources than FLPMA does. The NFMA qualifies many of those directives, however, both by reference to MUSYA's definitions of multiple use and sustained yield, and through its feasibility and practicability provisos.¹⁴⁰ As a result, neither statute fully captures the goals of achieving intergenerational equity and mandating preservation of the ecological integrity of federal lands and resources that ought to provide the focus of managing lands and resources for sustainability.¹⁴¹ The two agencies remain free to push land and resource management on the multiple use, sustained yield lands back toward the pre-1976 conception of appropriate federal land policy. As Part III shows, they have in fact done so at times, and the statutory frameworks tends to result in deferential review of land management decisions that fail to protect the long-term flow of ecosystem services.

III. THE IMPLEMENTATION OF THE EXISTING SUSTAINED YIELD MANDATE

The discussion above illustrates that both FLPMA and the BLM can reasonably be

(American Indian Agricultural Resource Management). They also define the term "sustained yield," although not very helpfully, as "the yield of forest products that a forest can produce continuously at a given intensity of management" for purposes of National Indian forest resource management. *Id.* at § 3103(14).

138. See Joseph A. Siegel, *Terrorism and Environmental Law: Chemical Facility Site Security vs. Right-to-Know?* 9 Widener L. Symposium J. 339, 366 (2004) (referring to the National Environmental Policy Act of 1969, as "the law that ushered in the 'environmental decade' when our Nation's modern environmental laws began to take shape"); A. Dan Tarlock, *Is There a There in Environmental Law?* 19 J. Land Use & Envtl. L. 213, 232 (2004) ("The major achievements of the environmental decade, the Clean Air and Clean Water Acts, the Endangered Species Act, and the 'Superfund' are justly celebrated as a major shift in United States resource policy.").

139. Michael Blumm contends, for example, that "[i]t is clear that the concepts of multiple use and sustained yield have failed to produce sustainable public land ecosystems supporting a variety of renewable resources." Blumm, *supra* n. 70, at 429.

140. See *supra* nn. 113–37 and accompanying text.

141. See Laitos et al., *supra* n. 56, at 84 (concluding that Congress has afforded a higher priority in the federal land management statutes to economic development than to ecosystem integrity).

interpreted to allow the multiple use agencies to emphasize resource extraction and commodity production, even if those activities create barriers to the achievement of long-term sustainability. This part demonstrates that the two agencies have actually pursued that kind of short-term agenda, though not all the time, and that the provisions of the two organic statutes provide insufficiently detailed mandates to enable litigants to convince the courts to force agencies to conform to the vision of sustainability reflected in international environmental law.

According to at least one account, the multiple use agencies rarely emphasize the sustained yield mandate reflected in FLPMA and the NFMA in managing the lands and resources under their jurisdiction. The BLM, in particular, appears to have largely ignored its responsibility under FLPMA to manage on a sustained yield basis despite FLPMA's apparently clearer break from the MUSYA tradition than that intended by the NFMA.¹⁴² This Part first inquires how the Forest Service and the BLM have interpreted and applied the sustained yield mandate, under which they both operate, in the regulations they have adopted under FLPMA and the NFMA. It then analyzes litigation in which the courts have addressed the meaning and legal significance of the sustained yield management standard. The assessment of both the agencies' regulations and the judicial decisions addressing issues relating to sustained yield shows that neither law has fully achieved the preservation of ecological integrity or protected intergenerational equity to the extent envisioned by this Article's conception of sustainability.

The following discussion reveals that both the BLM and the Forest Service describe their missions to include protecting the lands and resources they manage so that they will be capable of meeting the needs of both present and future generations. Both have at times committed to a version of sustainability that looks beyond the "productive" capacity of the public lands, narrowly defined as commodity maximization, and that includes preserving ecological health and diversity. The history of the implementation of the Forest Service's planning regulations shows, however, that the agencies may easily shift the focus of such commitments toward resource extraction and commodity maximization, and the agencies have in fact done so on occasion. Judicial review under the current statutes is unlikely to prevent future repeat performances.

A. *Unsustainable Agency Regulations*

The regulations of both the BLM and the Forest Service purport to implement the sustained yield mandate under which they operate. The BLM's regulations reflect the commodity-production orientation built into MUSYA rather than the two principal components of sustainability identified in Part II—promoting intergenerational equity by protecting ecological integrity.¹⁴³ The Forest Service, in its planning regulations, has identified ecological sustainability as a management goal, but has been inconsistent in the emphasis it has placed on that goal in relation to other decision making frameworks for managing the national forests.

142. Coggins & Glicksman, *supra* n. 25, at § 30:4.

143. *See infra* n. 55 and accompanying text.

1. The BLM Regulations

The BLM describes its mission in terms that are more consistent with this Article's recommended version of sustainability for federal land management than with the narrower version codified in FLPMA's definition of sustained yield: "Working with its partners at the local, state, and national levels, the BLM will meet its mission of sustaining the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations."¹⁴⁴ The agency's recognition of its obligation to contribute to intergenerational equity is clear in the reference to future generations. Further, the agency defines its mission to extend beyond sustaining resource productivity. Instead, it commits to preserving resource health and diversity as well as resource productivity. That portion of the mission statement reflects FLPMA's definition of multiple use, which entails managing to prevent impairment of environmental quality as well as resource "productivity."¹⁴⁵

The BLM has restated this vision of its *raison d'être* elsewhere. In providing public notice of the availability of one of its resource management plans, for example, the BLM described its "mission" as "sustain[ing] the health, diversity, and productivity of the public lands it manages for the use and enjoyment of present and future generations."¹⁴⁶ It also stated in the preamble to its regulations governing livestock grazing on the public lands that:

Long-term stewardship of public lands is inherent in the stated missions and goals of the agency in Section 102(a) of FLPMA. There are also many sections . . . in the grazing regulations that provide mechanisms for exercising stewardship of the public lands to ensure that the lands are productive and available to future generations. Additionally, the concept is embodied in BLM's mission statement: "sustains the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations."¹⁴⁷

In such statements, the BLM has professed its commitment to intergenerational equity and protection of resource health and diversity, as well as the productivity of the lands and resources it manages.

But the BLM's regulations include a direct reference to "future generations" only twice. First, the regulations incorporate the definition of "multiple use" found in FLPMA.¹⁴⁸ Second, they provide that lands may be classified for retention under the CMUA if they are not suitable for disposal and are capable of achieving several goals, which include providing "needed recreation, conservation, and scenic areas and open space . . . and assurance of adequate outdoor recreation resources for present and future generations of Americans."¹⁴⁹ The myriad references to multiple use management in the

144. Dept. of the Int., Bureau of Land Mgt., *About the BLM*, http://www.blm.gov/wo/st/en/info/About_BLM.html (last updated Mar. 11, 2009).

145. 43 U.S.C. § 1702(c).

146. Dept. of the Int., Bureau of Land Mgt., Notice of Availability of Record of Decision for the Eagle Lake Resource Management Plan, 73 Fed. Reg. 24086, 24086 (May 1, 2008).

147. Dept. of the Int., Bureau of Land Mgt., Grazing Administration—Exclusive of Alaska, 71 Fed. Reg. 39402, 39478 (July 12, 2006).

148. 43 C.F.R. § 1601.0-5(i) (2008).

149. *Id.* at § 2420.2(b)(5) (2008). The regulation cites the Land and Water Conservation Fund Act, 16 U.S.C. §§ 4601–4601-11. That statute "declares it to be desirable that all American people of present and future

regulations incorporate FLPMA's references to the needs of future generations, the prevention of impairment of environmental quality, and the various values served by the public lands.¹⁵⁰ But the BLM's definition of sustained yield, like FLPMA's, stresses nonimpairment of land productivity.¹⁵¹

BLM regulations incorporate FLPMA's general multiple use, sustained yield mandate into specific resource management contexts. The agency's regulations governing minerals management, for example, state that § 302 of FLPMA¹⁵² "provides the general authority for BLM to manage the use, occupancy, and development of the public lands under the principles of multiple use and sustained yield in accordance with the land use plans that BLM develops under FLPMA."¹⁵³ BLM regulations governing grazing regulations require management "in a manner consistent with land use plans, multiple use, sustained yield, environmental values, economic and other objectives stated in" FLPMA, among other laws.¹⁵⁴

The BLM's regulations, therefore, reflect a commitment to promoting intergenerational equity and to promoting the health and diversity, in addition to the "productivity," of the lands and resources under its stewardship, either explicitly or through its many references to FLPMA's definition of multiple use. As section B below indicates, however, in practice these commitments have done little to constrain the BLM's management discretion or provide a basis for challenging particular BLM decisions as inconsistent with sustainable land and resource use.

2. The Forest Service Regulations

The mission statement of the Forest Service is similar to that of the BLM. The Forest Service states that its mission "is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations."¹⁵⁵ This mission includes "[p]rotecting and managing the National Forests and Grasslands so they best demonstrate the sustainable multiple-use management concept."¹⁵⁶ If that "concept" is the one that has governed the Forest Service since the adoption of MUSYA, it may harken back to the commodity orientation of that law. The Forest Service also defines its mission, however, to include "[a]dvocating a conservation ethic in promoting the health, productivity, diversity, and beauty of forests and associated lands."¹⁵⁷ That vision of promoting intergenerational equity clearly extends

generations be assured adequate outdoor recreation resources." *Id.* at § 460l.

150. See 43 U.S.C. § 1702(c) (defining "multiple use" by reference to all of these elements).

151. 43 C.F.R. § 2400.0-5(p) (2008) ("Sustained yield of the several products and services means the achievement and maintenance of a high-level annual or regular periodic output of the various renewable resources of land without impairment of the productivity of the land.") (emphasis omitted).

152. 43 U.S.C. § 1732.

153. 43 C.F.R. § 3601.3(b) (2008).

154. *Id.* at § 4100.0-2(b). See also *id.* at § 4100.0-8 ("The authorized officer shall manage livestock grazing on public lands under the principle of multiple use and sustained yield, and in accordance with applicable land use plans.").

155. U.S. Forest Serv., *About Us—Mission*, <http://www.fs.fed.us/aboutus/mission.shtml> (last updated Oct. 23, 2008).

156. *Id.*

157. *Id.* See also Dept. Agric., Natl. Forest Serv., Natl. Forest Sys. Land Mgt. Plan., Notice of proposed rule, request for comments, 72 Fed. Reg. 48514, 48515 (Aug. 23, 2007) (asserting that proposed planning rule would "better allow[] the Agency to carry out its mission 'to sustain the health, diversity, and productivity of

beyond maximization of forest products such as timber harvests.

The management orientation of the Forest Service's regulations is not as clear. The agency's current planning regulations¹⁵⁸ provide that,

[c]onsistent with the [MUSYA] . . . , the overall goal of managing the [NFS] is to sustain the multiple uses of its renewable resources in perpetuity while maintaining the long-term productivity of the land. Resources are to be managed so they are utilized in the combination that will best meet the needs of the American people. Maintaining or restoring the health of the land enables the [NFS] to provide a sustainable flow of uses, benefits, products, services, and visitor opportunities.¹⁵⁹

On the one hand, the cross-reference to MUSYA's version of multiple use and sustained yield and its use of the term "productivity" appears to conform to MUSYA's narrow version of sustainability, rather than the broader one envisioned in the Forest Service mission statement. On the other hand, the regulations refer to restoration of land health (albeit not to diversity). They also recognize that land and resource health is a prerequisite to ensuring a sustainable flow of multiple uses, products, services (which can be construed to include ecosystem services), and any other "benefits" that the national forests are capable of providing. Thus, ecosystem health and diversity go hand in hand with land and resource productivity. The Committee of Scientists convened during the Clinton Administration¹⁶⁰ as part of the process of overhauling the agency's planning regulations put it this way:

[S]ustainability in [the] modern sense¹⁶¹ has three aspects: ecological, economic, and social. These different aspects of sustainability are interrelated: the sustainability of ecological systems is a necessary prerequisite for strong, productive economies; enduring human communities; and the values people seek from wildlands. Most basically, we compromise human welfare if we fail to sustain vital, functioning ecological systems. It is also true that strong economies and communities are often a prerequisite to societies possessing the will and patience needed to sustain ecological systems.¹⁶²

the Nation's forests and grasslands to meet the needs of present and future generations").

158. The Forest Service overhauled its planning regulations both in 2000 and 2005. Dept. Agric., Natl. Forest Serv., Natl. Forest Sys. Land and Resource Mgt. Plan., 65 Fed. Reg. 67514 (Nov. 9, 2000); Dept. Agric., Natl. Forest Serv., Natl. Forest Sys. Land and Resource Mgt. Plan., Removal of 2000 Planning Rule, 70 Fed. Reg. 1022 (Jan. 5, 2005). The 2005 regulations were invalidated on the basis of the Forest Service's failure to comply with the procedural requirements of NEPA and the Endangered Species Act. *Citizens for Better Forestry v. U.S. Dept. of Agric.*, 481 F. Supp. 2d 1059 (N.D. Cal. 2007), *motion to amend denied*, No. C 05-114 PJH, 2007 WL 1970096 (N.D. Cal. July 3, 2007). The next year, the Forest Service reissued its planning regulations. Dept. Agric., Natl. Forest Serv., Natl. Forest Sys. Land Mgt. Plan., Final rule and record of decision, 73 Fed. Reg. 21468 (Apr. 21, 2008) (to be codified at 36 C.F.R. §§ 219.1–219.16 (2009)). The 2008 regulations are identical in most important respects to the invalidated 2005 regulations. The references in this article to the current regulations are to the 2008 version of the regulations. See Dept. Agric., Natl. Forest Serv., Natl. Forest Sys. Land Mgt. Plan., Notice of proposed rule, request for comments, 72 Fed. Reg. 48521 (Aug. 23, 2007) ("The proposed rule is identical to the 2005 planning rule for social, economic, and ecological sustainability requirements.").

159. 36 C.F.R. § 219.1(b) (2008).

160. In December 1997, the Secretary of Agriculture, Dan Glickman, appointed a Committee of Scientists for the purpose of developing recommendations for improvements in the planning process for the national forests. Wilkinson, *supra* n. 7, at 308.

161. The Committee, relying on the Brundtland Commission report, defined the "modern" use of sustainability as "meet[ing] the needs of the present without compromising the ability of future generations to meet their own needs." Scientists, *supra* n. 2, at 13.

162. *Id.*

Other provisions of the Forest Service regulations seem more narrowly geared toward the older, commodity-oriented definition of sustainability. The regulations state, for example, that management plans for timber resources must “[b]e designed to aid in providing a continuous supply of national forest timber for the use and necessities of the citizens of the United States” and “[b]e based on the principle of sustained yield, with due consideration to the condition of the area and the timber stands covered by the plan.”¹⁶³

Its mission statement notwithstanding, the Forest Service’s commitment to implementing a broader version of sustainability than the one derived from MUSYA has been inconsistent. In 2000, when the Forest Service adopted its first comprehensive revision of the regulations (initially adopted in 1982) that govern land and resource management planning, it identified three different types of sustainability: ecological, economic, and social. Like the Committee of Scientists report that paved the way for the 2000 regulations, the Forest Service recognized that the three types are interdependent.¹⁶⁴ The agency chose under the Clinton Administration to declare long-term ecological sustainability to be the first priority of forest planning and management because “it is essential that uses of today do not impair the functioning of ecological processes and the ability of these natural resources to contribute to sustainability in the future.”¹⁶⁵ The regulations define ecological sustainability as the maintenance of ecosystems, including the diversity of plant and animal communities and the productive capacity of ecological systems.¹⁶⁶ One court later characterized this emphasis as a change in the Forest Service’s mission from “multiple use” to “ecological sustainability” management.¹⁶⁷ At about the same time, the Forest Service issued regulations to govern the management of roadless areas in the national forests. In doing so, it described its responsibility in general terms as “managing National Forest System resources to sustain the health, diversity, and productivity of the nation’s forests and grasslands to meet the needs of present and future generations.”¹⁶⁸

The decision of the Forest Service in 2000 to elevate protection of ecological sustainability above the other two “aspects” conformed to the recommendations of the Committee of Scientists convened by the Clinton Administration to pave the way for an overhaul of the agency’s 1982 planning regulations. Professor Charles Wilkinson, a member of the Committee, explained that choice:

The Committee report goes beyond most statements of sustainability in that it gives primacy to one of the three components—ecological sustainability. This “ranking” is not

163. 36 C.F.R. § 221.3(a) (2008).

164. The 2000 planning rules defined sustainability as “composed of interdependent ecological, social, and economic elements [embodying] the principles of multiple-use and sustained-yield without impairment to the productivity of the land.” 36 C.F.R. § 219.1(b)(3) (2003).

165. *Id.* at § 219.2. See also Robert Keiter, *Ecological Concepts, Legal Standards, and Public Land Law*, 44 Nat. Resources J. 943, 964 (2004) (stating that “the Clinton administration’s 2000 NFMA planning regulations gave priority to ecological sustainability over economic and social sustainability for forest management purposes”).

166. 36 C.F.R. § 219.36 (2003).

167. *Wyo. v. U.S. Dept. of Agric.*, 277 F. Supp. 2d 1197, 1211 (D. Wyo. 2003), *vacated and remanded as moot*, 414 F.3d 1207 (10th Cir. 2005).

168. Dept. Agric., Natl. Forest Serv., Special Areas, Roadless Area Conservation, 66 Fed. Reg. 3244, 3244 (Jan. 12, 2001).

due to a sense that the ecological component is somehow more important than the economic and social components (obviously, economic and social well-being is of great importance to people). Rather, the reasoning is that, in order for social and economic benefits to be sustainable, they must depend upon the integrity of the water, soil, vegetation, and air that healthy ecosystems provide. Put differently, the Committee clearly expects that the national forests will continue to provide economic goods and services, but it also believes that an environmental baseline should first be established to ensure that such economic benefits can be provided over time. Refining the idea of sustainability in this way gives an edge to the doctrine and offers guidance to land managers in a way that a policy like multiple use-sustained yield management cannot.¹⁶⁹

The Committee itself proffered its conviction that “ecological sustainability lays a necessary foundation for national forests and grasslands to contribute to the economic and social components of sustainability, making contributions to strong, productive economies and creating opportunities for enduring human communities.”¹⁷⁰

The 2008 planning regulations, issued during the second presidential term of George W. Bush, also reflect a commitment to sustainability and intergenerational equity. The preamble to the 2008 regulations explain that the rules “set[] the stage for a planning process that can be responsive to the desires and needs of present and future generations of Americans, for the multiple uses of NFS lands.”¹⁷¹ The preamble to the proposed version of those planning rules stated that “[s]ustaining the productivity of the land and its renewable resources means meeting present needs without compromising the ability of those lands and resources to meet the needs of future generations.”¹⁷² But the regulations themselves place little actual emphasis on promoting sustainability.¹⁷³ What is more, the Bush Forest Service planning rules elevate the economic and social components of sustainability to the same level of importance as ecological sustainability, “thus reasserting the productive dimensions of the national forest mission.”¹⁷⁴

169. Wilkinson, *supra* n. 7, at 313. Cf. Coggins & Glicksman, *supra*, n. 25, at § 30:4 (urging, “at a minimum, that management of renewable resources should be aimed at achieving a long-term equilibrium in which each of the resources will be a prominent part or contributor”).

170. Scientists, *supra* n. 2, at 146. See *id.* at 175 (arguing that “[t]o assure the continuation of this array of benefits, sustainability should be the guiding star for stewardship of the national forests and grasslands”).

171. Dept. of Agric., Natl. Forest Serv., Natl. Forest Sys. Land Mgt. Plan., Final rule and record of decision, 73 Fed. Reg. 21468, 21477–78 (Apr. 21, 2008). The Forest Service replaced the 2000 planning rules with the 2005 version before the agency adopted or revised any land use plans using the 2000 regulations. See Coggins & Glicksman, *supra* n. 25, at § 16:36.

172. 72 Fed. Reg. at 48521.

173. See Robert L. Glicksman, *Traveling in Opposite Directions: Roadless Area Management under the Clinton and Bush Administrations*, 34 *Envtl. L.* 1143, 1175 (2004) (describing the proposed version of the 2005 final planning regulations).

174. Keiter, *supra* n. 165, at 964 (discussing the proposed version of the 2005 planning regulations). See also Coggins & Glicksman, *supra* n. 25, at § 16:45 (asserting that the shift in terminology between the Clinton and Bush rules “appears to allow planners to place greater emphasis on the social and economic as opposed to the ecological component of sustainability”). The Interior Department’s Bureau of Indian Affairs also has issued regulations that reflect a commodity-oriented view of sustainable resource management. See e.g. 25 C.F.R. § 163.1 (2009) (“Sustained yield means the yield of forest products that a forest can produce continuously at a given intensity of management.”) (emphasis omitted); *id.* at § 166.4 (“Sustained yield means the yield of agricultural products that a unit of land can produce continuously at a given level of use.”) (emphasis omitted). The Supreme Court has interpreted the Bureau’s mandate in similar terms. See *U.S. v. Mitchell*, 463 U.S. 206, 209 (1983) (“Congress has directed the Secretary to adhere to principles of sustained-yield forestry on all Indian forest lands under his supervision.”); *White Mt. Apache Tribe v. Bracker*, 448 U.S. 136, 149 (1980) (noting “the overriding federal objective of guaranteeing Indians that they will ‘receive . . . the benefit of whatever profit [the forest] is capable of yielding.’”).

That difference in emphasis also appears elsewhere in the two sets of regulations. The 2000 regulations began by reciting the Forest Service's commitment to the "stewardship of the natural resources" of the national forests.¹⁷⁵ The more recent regulations begin instead with a commitment to the "overall goal of managing the [National Forest System] . . . to sustain the multiple uses of its renewable resources."¹⁷⁶ The 2000 regulations recognize not only the uses, products, and services that the national forests provide, but also the important "values" the forests reflect and the "intangible benefits" they provide, including "beauty, inspiration, and wonder."¹⁷⁷ The stated goal of the current regulations is to achieve "a sustainable flow of uses, benefits, products, services, and visitor opportunities."¹⁷⁸ These differences in terminology are consistent with "a subtle shift toward the commoditization of the national forests."¹⁷⁹

The replacement of the Forest Service's 2000 planning regulations with the 2008 version illustrates the potential for the multiple use agencies to interpret their statutory mandates in ways that hearken back to the commodity-driven emphasis of MUSYA. In these and other instances during the Bush Administration, both agencies apparently interpreted the multiple use laws to allow them to substitute maximization of short-term commodity production (such as timber, forage, and minerals) for a commitment to assuring that the full array of public land uses and values that are available now continue to be available to future generations through the preservation of ecological integrity. The 2008 planning regulations are under judicial challenge. If a court reverses those regulations on the merits, the result may be to put some teeth into the ecological integrity component of the sustained yield mandate.¹⁸⁰ Cases to date provide little assurance of that result. Section B below reveals that the courts for the most part have not interpreted the multiple use, sustained yield statutes in a manner that binds the two agencies to any particular version of sustainability, no less the one that emphasizes preservation of ecosystem services for the benefit of present and future generations.

B. Judicial Review of the Application of the Sustainability Provisions Lacks Teeth

Although the courts have rendered numerous decisions under the multiple use sustained yield statutes,¹⁸¹ relatively few cases have required the courts to determine whether BLM or Forest Service actions conform to the basic mandate that they manage in accordance with multiple use, sustained yield principles. The cases that do involve such determinations reflect a general judicial disinclination to interpret the multiple use, sustained yield statutes in a manner that creates meaningful and enforceable restrictions

175. 36 C.F.R. § 219.1(a) (2003).

176. 36 C.F.R. § 219.1(b) (2008).

177. 36 C.F.R. § 219.1(b)(1) (2003).

178. 36 C.F.R. § 219.1(b) (2008).

179. Coggins & Glicksman, *supra* n. 25, at § 16:45.

180. A federal district court in California struck down the Bush Administration's first effort to revamp the NFMA planning rules on the ground that the agency failed to comply with the procedures of NEPA or the Endangered Species Act in promulgating them. The court did not address the substantive validity of the rules under the NFMA. *See supra* n. 158.

181. One court, for example, noted that the requirements in MUSYA and the NFMA that the Forest Service carry out commercial timber sales in accordance with the "sustained yield formula . . . produces constant litigation between environmental groups and the Forest Service." *Sierra Club v. U.S. Forest Serv.*, 535 F. Supp. 2d 1268, 1272 (N.D. Ga. 2008).

on the discretion of the Forest Service and the BLM.¹⁸² The deference that the courts have accorded the agencies has resulted from a long tradition of deferential review of implementation of the federal land management statutes, the ambiguous or open-ended language of the statutory provisions in question, and a reluctance to second-guess the scientific expertise of agency decision makers.

The classic description of the multiple use, sustained yield mandate appears in *Strickland v. Morton*,¹⁸³ in which the Ninth Circuit characterized the CMUA as a law that “breathe[s] discretion at every pore.”¹⁸⁴ The rest of the court’s description is repeated less often, but it is no less revealing about the nature of the core statutory mandate. The court construed the Act “to be a general grant of authority to the Secretary to administer the retention and disposal of those public lands under his domain as he felt would best comport with the national interest and the public welfare.”¹⁸⁵ It found that the statute imposes “but few, and at that, the most generalized of limitations” on “the Secretary’s exercise of his discretion on the merits of a classification decision.”¹⁸⁶ Finally, it regarded “the statute’s admonition to the Secretary to ‘give due consideration to all pertinent factors’ in making his classification decision, [as] platitudinous at best.”¹⁸⁷ The court found the statute to be so lacking in enforceable constraints that it held that the Interior Secretary’s decision to classify certain lands as suitable for retention in federal ownership, rather than to make them available for homestead entry was an action committed to agency discretion and therefore judicially unreviewable under the Administrative Procedure Act.¹⁸⁸

Even when judicial review of compliance with the multiple use or sustained yield mandates is available, it is usually highly deferential. A federal district court in Alaska in a 1971 decision refused to enjoin timber harvesting in the Tongass National Forest at the behest of environmental groups. It concluded that it was obliged to refrain from interfering with discretionary decisions the Forest Service makes under MUSYA and that it was appropriate to presume that the agency gave due consideration to all of the values specified in the statute.¹⁸⁹ Similarly, in a decision rendered the year before Congress

182. Michael Blumm argues that “multiple use is founded upon a standardless delegation of authority to managers of public lands and waters. . . .” Blumm, *supra* n.70, at 407. As a result, he adds, FLPMA and the NFMA are examples of “the archetypal ‘special interest’ legislation” that has led to frequent capitulation of the Forest Service and the BLM to pressure from local commodity interest groups, such as ranchers, timber companies, and electric utilities. *Id.*

The courts have found sustained yield provisions in other environmental statutes to be no more helpful in defining the parameters of agency discretion than the provisions of MUSYA, FLPMA, and the NFMA. *See e.g. Animal Welfare Inst. v. Kreps*, 561 F.2d 1002, 1014 (D.C. Cir. 1977) (concluding that the Marine Mammal Protection Act, 16 U.S.C. § 1361 (2006), “sets as a goal ‘to obtain an optimum sustainable population keeping in mind the optimum carrying capacity of the habitat,’” but that “the definitions of both [optimum sustainable population] and optimum carrying capacity are singularly unenlightening; each is defined in terms of the other.”).

183. 519 F.2d 467 (9th Cir. 1975).

184. *Id.* at 469.

185. *Id.*

186. *Id.*

187. *Id.* at 469–70.

188. *Strickland v. Morton*, 519 F.2d at 467–72. The Administrative Procedure Act provides that its judicial review provisions, including the availability of judicial review in federal courts, apply, but not when “agency action is committed to agency discretion by law.” 5 U.S.C. § 701(a)(2) (2006). *See also id.* at §§ 702, 704 (giving aggrieved parties a right to review, and stating that final agency action is subject to judicial review).

189. *Sierra Club v. Hardin*, 325 F. Supp. 99, 123–24 (D. Alaska 1971). *See also Dorothy Thomas Found.*,

adopted the NFMA, the Fourth Circuit characterized the provisions of MUSYA as “broad and ambiguous” and, as a result, lacking any bearing on the legality of proposed timber sales.¹⁹⁰

In *Perkins v. Bergland*, a leading case construing MUSYA’s multiple use, sustained yield provisions, the Ninth Circuit addressed the claims of two brothers that the Forest Service had improperly reduced their grazing permits.¹⁹¹ They argued that MUSYA supplied sufficient standards to allow judicial review of what the court called “the highly technical assessment of the proper carrying capacity of grazing land.”¹⁹² The court responded that MUSYA is composed of “the most general clauses and phrases” that “can hardly be considered concrete limits upon agency discretion. Rather, it is language which ‘breathe[s] discretion at every pore.’”¹⁹³ The court refused to upset the agency’s determination because doing so would require the court to “choos[e] one theory of range management as superior to another.”¹⁹⁴ Judicial review was available only to determine whether the Forest Service’s factual findings were arbitrary and capricious and whether its decision to reduce grazing allotments was irrational.¹⁹⁵ The courts subsequently have applied *Perkins*’ characterization of the nature and limitations of judicial review to the multiple use, sustained yield provisions of both the NFMA¹⁹⁶ and FLPMA.¹⁹⁷

Some courts have even written the sustained yield component of the multiple use statutes out of existence. In *Wyoming v. United States Department of Agriculture*,¹⁹⁸ for example, a federal district court in Wyoming struck down the Clinton Administration’s roadless area management rule¹⁹⁹ because it violated the National Environmental Policy Act (NEPA) and the Wilderness Act. In doing so, the court stated that “[t]he Wilderness Act provides protection for a use of the National Forests that was not contemplated by either the Organic Act or the MUSYA—preservation of the National Forests for use and enjoyment of present and future generations.”²⁰⁰ While it is true that neither the 1897

Inc. v. Hardin, 317 F. Supp. 1072, 1074–75 (W.D.N.C. 1970) (rejecting attack on Forest Service’s timber management under MUSYA).

190. *W. Va. Div. of Izaak Walton League of Am. v. Butz*, 522 F.2d 945, 954 (4th Cir. 1975). *Cf. U.S. v. N.M.*, 438 U.S. 696 (1978) (recognizing that MUSYA broadens the purposes for which the national forests must be administered but holding that it did not expand the United States’ implied reserved water rights).

191. 608 F.2d 803 (9th Cir. 1979).

192. *Id.* at 806.

193. *Id.* at 806 (quoting *Strickland v. Morton*, 519 F.2d at 469).

194. *Id.* at 807.

195. *Id.*

196. *See e.g. Clinch Coalition v. Damon*, 316 F. Supp. 2d 364, 378 (W.D. Va. 2004); *Big Hole Ranchers Assn., Inc. v. U.S. Forest Serv.*, 686 F. Supp. 256, 263 (D. Mont. 1988) (noting the breadth of discretion vested in the Forest Service by MUSYA and the NFMA).

197. *See e.g. Utah v. Norton*, 2006 WL 2711798 at *21 (D. Utah Sept. 20, 2006) (“These principles allow the BLM broad discretion in its treatment of public lands.”), *aff’d on other grounds sub nom. Utah v. U.S. Dept. of the Int.*, 535 F.3d 1184 (10th Cir. 2008).

198. 277 F. Supp. 2d 1197 (D. Wyo. 2003).

199. Department of Agriculture, National Forest Service, Special Areas; Roadless Area Conservation, 66 Fed. Reg. 3244. For discussion of the rule and its Bush Administration successor, see Glicksman, *supra* n. 173.

200. *Wyoming v. U.S. Dept. of Agric.*, 277 F. Supp. at 1234. The Wilderness Act provides:

In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future

Organic Act nor MUSYA refers to use of the national forests by future generations, MUSYA's provisions recognize the Forest Service's obligation to manage the forests for the long term, without impairing the productivity of the forests.²⁰¹ In addition, the NFMA, which was the statutory underpinning for the roadless rule, declares that the National Forest System is "dedicated to the long-term benefit for present and future generations."²⁰²

The courts have on occasion recognized that the sustained yield provisions have substantive content beyond a barely reviewable mandate to consider the listed statutory factors. The Supreme Court in *Norton v. Southern Utah Wilderness Alliance*, for example, characterized FLPMA's sustained yield "management goal" to "require[] BLM to control depleting uses over time, so as to ensure a high level of valuable uses in the future."²⁰³ The actual holding of the case, however, was that the district court lacked jurisdiction to compel the BLM to restrict off-road vehicle use that allegedly threatened degradation of wilderness study areas because the plaintiff environmental group failed to identify a discrete action that the BLM was required but failed to take. The Third Circuit remarked in 2005 that "Forest Plans must provide this multiple-use and sustained yield of goods and services from the Allegheny National Forest in a way that maximizes long-term net public benefits in an environmentally sound manner."²⁰⁴ Despite its recognition of this obligation, the court refused to block the agency's decision to allow clearcutting, in part because the NFMA mandates consideration of economic as well as environmental factors.²⁰⁵ A federal district court, in addressing the charge that the Forest Service was managing the national forests in Texas in violation of the NFMA, stated:

The National Forests are managed for obtaining a sustained yield of various resources, and

generations the benefits of an enduring resource of wilderness.

16 U.S.C. § 1131(a). Many other federal environmental and natural resource management statutes explicitly seek to protect the interests of future generations. See e.g. *id.* at § 1 (stating that "the fundamental purpose of the said parks, monuments, and reservations . . . is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same . . . unimpaired for the enjoyment of future generations."); *id.* at § 470(b)(4) (stating that one of the purposes of the National Historic Preservation Act was to preserve a nation's "irreplaceable heritage . . . so that its vital legacy of cultural, educational, aesthetic, inspirational, economic, and energy benefits will be maintained and enriched for future generations"); *id.* at § 1271 (declaring it to be "the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations"); 42 U.S.C. § 4331(a) (2006) ("declares that it is the continuing policy of the Federal Government . . . to use all practicable means and measures . . . in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans"). These statutes do not necessarily create mechanisms to protect the interests of future generations if the agencies do not do so. See e.g. *S. Utah Wilderness Alliance v. Natl. Park Serv.*, 387 F. Supp. 2d 1178, 1189–90 (D. Utah 2005) (finding that the NPS Organic Act "does not define the word 'unimpaired' or the phrase 'unimpaired for the enjoyment of future generations.' Thus, while the Act clearly directs the NPS to regulate parks pursuant to broad objectives, the agency is left with the task of further defining and applying this standard.").

201. See *supra* nn. 89–90 and accompanying text.

202. 16 U.S.C. § 1609(a).

203. *Norton v. S. Utah Wilderness Alliance*, 542 U.S. 55, 58 (2004) (citing 43 U.S.C. § 1702(h) (2000), which defines sustained yield).

204. *Allegheny Def. Project, Inc. v. U.S. Forest Serv.*, 423 F.3d 215, 223 (3d Cir. 2005).

205. *Id.* at 231–32.

of course the mix of forest resources changes, requiring at times trading one resource for another in a particular area of the forest. In making these trade-offs, however, the Forest Service cannot substantially and permanently damage the productivity of the forest land. . . .

The Forest Service has a difficult task managing the forest lands in a way that sustains a yield of all key forest resources. Compliance with the NFMA and regulations is not easy, but it is necessary to ensure a sustained yield of forest resources in perpetuity for the public good.²⁰⁶

But the Fifth Circuit vacated that decision because the suit represented an illegitimate programmatic challenge rather than an effort to reverse any identifiable final agency action.²⁰⁷

The cases discussed above do little to preclude the BLM and the Forest Service from “deep fry[ing] the goose that laid the golden egg” in their management of federal lands and resources.²⁰⁸ Neither statute’s sustained yield provisions clearly mandate that the multiple use agencies preserve the ecological integrity of the federal lands in a manner that is consistent with intergenerational equity, the agencies have not always done so, and the courts are disinclined to intervene when they do not. Part IV provides suggestions for strengthening the sustained yield provisions of FLPMA and the NFMA so that they impose on the land management agencies a duty to preserve ecological integrity that is enforceable by representatives of future generations.

IV. A NATURAL RESOURCE TRUST MODEL FOR PROTECTING ECOLOGICAL INTEGRITY

Congress has recognized in the federal land management statutes that federal lands and resources ought to benefit future as well as present generations. The multiple use, sustained yield statutes that govern management of the bulk of the federal estate, however, fall short of ensuring intergenerational equity through protection of an unimpaired flow of ecosystem services, a concept which is at the core of the international law principle of sustainable resource use. One of the problems presented by MUSYA, FLPMA, and the NFMA is that they define sustained yield in a way that appears to emphasize commodity production instead of protection of ecological integrity. A second problem is that the dictate to manage in accordance with multiple use, sustained yield principles²⁰⁹ is too vague, and affords the agencies too much discretion, to make the agencies accountable for management decisions that impair ecological integrity. In particular, the sustained yield mandate fails to provide federal land users a sufficient opportunity to enforce the agencies’ responsibility to avoid “deep frying the goose” if they manage the federal lands in ways that disrupt the capacity of those lands to continue

206. *Sierra Club v. Glickman*, 974 F. Supp. 905, 945–46 (E.D. Tex. 1997), *aff’d sub nom. Sierra Club v. Peterson*, 185 F.3d 349 (5th Cir. 1999), *vacated and remanded on reh’g en banc*, 228 F.3d 559 (5th Cir. 2000). *Cf. Mitchell v. U.S.*, 13 Cl. Ct. 474, 480 (1987) (construing one of the Indian land statutes, 25 U.S.C. § 466, to require “sustained yield management and hence an ongoing Governmental duty of forest regeneration”); *Mitchell v. U.S.*, 10 Cl. Ct. 787, 789 (1986) (“The duty to replant, in other words, is an ever-present one, rather than one tied to a fixed point in time.”).

207. *Sierra Club v. Peterson*, 228 F.2d 559 (5th Cir. 2000).

208. *Conserv. L. Found. v. Evans*, 209 F. Supp. 2d 1, 7 (D.D.C. 2001) (citing 141 Cong. Rec. H10232 (daily ed. Oct. 18, 1995)).

209. *See* 16 U.S.C. § 1604(e); 43 U.S.C. § 1732(a).

to provide an unimpaired flow of ecosystem services or otherwise benefit present users at the expense of the interests of future generations.

This Part recommends that the multiple use statutes be amended to enhance intergenerational equity in federal land and resource management by requiring protection of the ecological integrity of the lands and resources administered by the Forest Service and the BLM. Section A describes how the laws governing trusts and future interests may be helpful in creating enforceable duties on the part of the land management agencies to preserve ecological integrity. Section B analyzes how the agencies' trust obligations may be enforced by challenging particular land management decisions that deviate from those obligations. Section C urges the enactment of substantive standards to flesh out the duties of the trustees, and provides examples of the kinds of standards that may be well suited to achieving the protection of long-term ecological integrity, without sacrificing the interests of the present generation. The argument here relies on several contexts in which trusts have been used, or in which scholars have argued they should be used, to preserve trust capital (such as natural resources) for future use. In doing so, it extends the notion of a natural resource trust in which the trustees are bound to protect ecological integrity into a context in which the trust construct has not yet been used.

Even a new, general mandate to protect ecological integrity or prevent waste of the trust corpus is unlikely to achieve the intergenerational equity goals promoted here, however. One of the principal problems of the FLPMA and NFMA provisions that aspire to achieving sustainable land and resource use is the absence of detailed directives by which the agencies may be held accountable. Section C therefore urges the enactment of substantive standards to flesh out the duties of the trustees, and provides examples of the kinds of standards that may be well suited to achieving the protection of long-term ecological integrity, without sacrificing the interests of the present generation. These context-specific standards would be rooted in current scientific understanding of the manner in which ecosystem components interrelate. They would allow agencies to pursue short-term gain (through resource extraction, for example), but not at the cost of long-term sustainability. The combination of more specific, science-based standards and the creation of fiduciary obligations for the multiple use agencies should make judicial review a more meaningful mechanism for holding the Forest Service and the BLM accountable if they deviate from the revised statutory mandate to pursue sustainable resource use.

A. *Intergenerational Equity, Natural Resource Trusts, and the Protection of Environmental Principal under Existing Law*

The achievement of sustainable resource development is an important way to promote intergenerational equity by preventing the present generation from making resource use choices at the expense of the interests of future generations.²¹⁰ The discussion above indicates that the multiple use, sustained yield statutes that govern decision making by the Forest Service and the BLM are not up to the task of preserving the flow of environmental services provided by the federal lands so that these services

210. See e.g. Edith Brown Weiss, *In Fairness to Future Generations: International Law, Common Patrimony, and Intergenerational Equity* 226 (UN U. & Transnational Publishers Inc. 1989).

will be available in uncompromised form for future generations. This section explores whether doctrines that are designed to protect the interests of those who come later under both domestic law and international environmental law—primarily the law of trusts—provide models for improving the regime that governs management of the multiple use federal lands so that ecological integrity is more likely to be protected and intergenerational equity is more likely to be achieved.

1. The Common Law Methods for Protecting Future Interest Holders

The Anglo-American property law system allows private ownership of assets to be split between those entitled to use those assets now (the holders of present possessory estates) and those entitled to use them in the future (the holders of future interests).²¹¹ One problem with splitting private ownership between those entitled to use the assets now and those entitled to use them later is that their interests may not coincide. Because present possessory estate holders control use decisions, the threat of improper infringement on the ownership rights of others typically involves current use that results in a decline in the value of future interests. The present possessory estate holders, for example, may prefer to cut down all the trees and sell the harvested timber or to extract all the oil and gas beneath the surface of the property to maximize the value of these assets during their right to present possession. The future interest holders may prefer that some of these resources be left in place so that they may benefit from them after the termination of the present possessory estate, even if that means a decline in the value of the land for the present possessors. Some mechanism is needed to accommodate the potentially conflicting interests of present possessors and the holders of future interests.

One common law solution that is designed to “keep[] in balance the conflicting desires of persons having interests in the same land” is the cause of action in waste.²¹² The waste action is designed to enable future interest holders to protect their interests by halting actions by present possessors that would improperly harm future interests or by compensating future interest holders for harm that has already occurred.²¹³ The first Restatement of Property defined “[t]he duty not to commit waste [as] a duty, the extent of which is correlative to the degree of protection to which the owner of the future interest is entitled as against uses made by, or conduct of, the owner of the possessory estate.”²¹⁴ The nature of the duty varies with the circumstances, and in particular, with the nature of the present possessory estates and future interests at issue.²¹⁵ The holder of

211. Joseph William Singer, *Introduction to Property* 304–06 (2d ed., Aspen 2005).

212. *Powell on Real Property* 679 (Richard R. Powell & Patrick H. Rohans eds., 1968) (stating that “waste is, functionally, a part of the law which keeps in balance the conflicting desires of persons having interests in the same land”) [hereinafter *Powell*]. *Powell* further defines waste as conduct (either by way of commission or omission) “on the part of the person in possession of land which is actionable at the behest of, and for the protection of the reasonable expectations of, another owner of an interest in the same land. Commonly (but not always) the complaining party is the owner of a future interest and the person whose conduct is called into question is the owner of a present interest.” *Id.*

213. William B. Stoebuck & Dale A. Whitman, *The Law of Property* 146, 159, 161–62 (3d ed., West 2000).

214. *Restatement (First) of Property* § 49 cmt. a (1936) [hereinafter *Restatement*].

215. Stoebuck & Whitman, *supra* n. 213, at 160. See also *Barnhart v. Barnhart*, 114 N.E.2d 378, 388 (Ill. 1953) (ruling that waste action by holder of contingent remainder was not precluded, but that, “because his interest is remote and contingent, . . . the scope of the right should be limited to that which is necessary to protect his possible eventual interest, i.e., the protection and preservation of the trust res”) (emphasis omitted); *Powell*, *supra* n. 212, at 683 (“As the [future] interest becomes more tenuous the possibility of securing

a life estate, for example, has “a duty not to act upon the land in which his estate for life exists so that his conduct causes the market value of the interests limited after his estate for life to be diminished.”²¹⁶ Most generally, the waste doctrine “restrains the present estate owner from acting in a manner that unreasonably injures the affected land and thus reduces the value of the future interest.”²¹⁷ If the land whose ownership is split among present possessors and future interest holders contains valuable nonrenewable resources, the duty not to commit waste restricts the authority of present possessory estate holders to extract and remove minerals.²¹⁸ If the property contains renewable resources such as trees, life estate holders may not diminish the market value of the accompanying future interest by cutting trees or other permanent growths.²¹⁹

Over time, the common law system of estates and future interest that originated in England was modified by the development of trusts.²²⁰ The recognition of trusts, the descendant of the use legalized by the Statute of Uses,²²¹ allows for more flexible management of property with split ownership. The trust mechanism separates legal and equitable ownership. It vests legal title to trust property in a trustee, who has enforceable fiduciary duties to manage the property for the benefit of the beneficiaries. These duties include an obligation to protect and avoid wasting trust assets, a duty to restore them when damaged, and a duty of loyalty to trust beneficiaries.²²² The trust beneficiaries hold equitable title. Just as under the traditional system of estates, equitable title may be split among those with the right to use and possess the property now and those with the right to do so in the future, when the equitable present possessory estate ends.²²³ These beneficiaries may seek judicial oversight of the trustee’s administration of the trust. If mismanagement or breach of fiduciary duty is shown, the courts may force the trustee to alter current management methods or to account to the beneficiaries for the results of past mismanagement.²²⁴ Typically, any one of the beneficiaries may bring suit alleging breach of fiduciary duty (such as a failure to protect trust assets against waste)²²⁵ or for an accounting.²²⁶

2. The Public Trust Doctrine

Although the trust concept was initially developed primarily to facilitate

protection at law becomes less and the need for resort to equity becomes greater.”).

216. *Restatement*, *supra* n. 214, at § 138.

217. John G. Sprankling, *Understanding Property Law* 124 (2d ed., LexisNexis/Matthew Bender 2007). This result flows from the law’s presumption “that the original grantor intended the estate holder to pass on possession of the land to the future interest holder in approximately the same condition it was received.” *Id.*

218. *Restatement*, *supra* n. 214, at § 138 cmt. d.

219. *Id.* at § 138 cmt. f.

220. See Jesse Dukeminier et al., *Property* 239–40 (6th ed., Aspen 2006).

221. Charles Donahue Jr., Thomas E. Kauper & Peter W. Martin, *Property: An Introduction to the Concept and the Institution* 445 (3d ed., West 1993).

222. See Mary Christina Wood, *Advancing the Sovereign Trust of Government to Safeguard the Environment for Present and Future Generations* 43–49 (white paper written in conjunction with the Climate Legacy Initiative) (May 2008) (available at <http://www.law.uoregon.edu/faculty/mwood/docs/cli.pdf>).

223. Dukeminier et al., *supra* n. 220, at 239.

224. See Singer, *supra* n. 211, at 318.

225. See Wood, *supra* n. 222, at 44 (“A trustee that fails to protect the property against ‘waste’ is liable to the beneficiaries.”).

226. See Zygmunt J.B. Plater et al., *Environmental Law and Policy: Nature, Law, and Society* 1074 (3d ed., Aspen 2004). See also Wood, *supra* n. 222, at 50–51.

management of private assets, the courts also have applied trust concepts in this country to public resources under the rubric of the public trust doctrine.²²⁷ Further, the same fiduciary obligations applicable to the trustees of private trusts also appear to apply to public trustees.²²⁸ Nonetheless, the public trust doctrine discussed in this section is not a sufficient substitute for new legislation imposing a trust framework on the multiple use agencies because the courts have applied the doctrine primarily in cases involving the use of state-owned lands and because its scope even in those cases tends to be limited.

The case typically regarded as the first to develop and apply the public trust doctrine in the United States²²⁹ was the Supreme Court's decision in *Illinois Central Railroad Company v. Illinois*,²³⁰ in which the Court declared that a public trust precluded the Illinois legislature from selling Chicago's harbor because it was important to commerce, navigation, and fishing. The status and scope of the public trust doctrine differ significantly from state to state in accordance with state constitutional provisions, statutes, and judicial decisions.²³¹ The common core premise of the doctrine in those states that recognize it is that "some natural resources are so important to the public's well being that they should not be destroyed by the present generation, but should instead be retained in 'trust' by the sovereign for the continued welfare of future generations."²³²

Courts have applied the public trust doctrine to prevent potentially damaging uses,²³³ to force state legislatures or agencies to take actions to protect trust resources,²³⁴ and even to require private interests that damage trust assets to compensate the state.²³⁵ Further, courts have recognized that the beneficiaries of the public trust include both present and future generations.²³⁶ Indeed, some scholars have construed the common

227. Professor Wood regards the public trust doctrine as "the original legal mechanism to ensure that government safeguards natural resources for public welfare and survival." Wood, *supra* n. 222, at 2.

228. *Id.* at 43 (stating that "basic standards from the private realm apply with equal force" to government trustees under the public trust doctrine).

229. The American doctrine had precursors in Roman and English law. See Eric Pearson, *The Public Trust Doctrine in Federal Law*, 24 J. Land, Resources, & Envtl. L. 173, 173 (2004); Wood, *supra* n. 222, at 25.

230. 146 U.S. 387 (1892). For a thorough exploration of the case, see Joseph D. Kearney & Thomas W. Merrill, *The Origins of the American Public Trust Doctrine: What Really Happened in Illinois Central*, 71 U. Chi. L. Rev. 799 (2004).

231. The courts in at least 38 states have recognized that the state holds lands beneath navigable waterways in trust for the public. *Ariz. Ctr. for L. in the Pub. Interest v. Hassell*, 837 P.2d 158, 167 n. 13 (Ariz. App. 1st Div. 1991).

232. Laitos et al., *supra* n. 56, at 623. See also Kearney & Merrill, *supra* n. 230, at 800 ("The public trust doctrine . . . posits that some resources are subject to a perpetual trust that forecloses private exclusion rights."). According to Mary Wood, "[t]he public trust represents a central dimension of the sovereign property interest. It simply means that the public owns in common certain property interests in natural resources and land within the territory, and that the government is the people's designated trustee with the obligation to protect such property on behalf of the citizens." Wood, *supra* n. 222, at 22.

233. In some jurisdictions, the courts bar actions that result in "substantial impairment" to trust resources. See Richard J. Lazarus, *Changing Conceptions of Property and Sovereignty in Natural Resources: Questioning the Public Trust Doctrine*, 71 Iowa L. Rev. 631, 652-53 (1986).

234. See *Ariz. Ctr. for L.*, 837 P.2d at 169 (stating that "the legislative and executive branches are judicially accountable for their dispositions of the public trust"). Cf. Pearson, *supra* n. 229, at 173 ("At its heart, the doctrine declares the legislative and executive branches of government to be without authority to act in derogation of trust principles.").

235. See Laitos et al., *supra* n. 56, at 625. Cf. Wood, *supra* n. 222, at 46 ("Trustees have the affirmative duty to recoup monetary damages against third parties that destroy trust assets.").

236. See e.g. *Ariz. Ctr. for L.*, 837 P.2d at 169 ("The beneficiaries of the public trust are not just present generations but those to come. The check and balance of judicial review provides a level of protection against improvident dissipation of an irreplaceable res."). See also Wood, *supra* n. 222, at 24 ("In the case of the public trust, the beneficiaries are the citizens, both present and future generations.").

law public trust doctrine to reflect a presumption that the government is obliged to preserve the natural and cultural legacy received from past generations for trust beneficiaries, the present and future generations.²³⁷ Under at least one formulation of the doctrine, “[t]he basic fiduciary duty is to maintain the asset’s ability to provide a steady abundance of environmental services for future generations.”²³⁸

Although the public trust doctrine plays an important role in management of state-owned lands and resources,²³⁹ its application has been limited. The doctrine typically covers only water and wildlife resources.²⁴⁰ Given biologists’ increasing recognition of “the complex interdependencies among the various resources, biogeochemical processes, and stressors that comprise ecosystems,”²⁴¹ this limitation seems to collide with physical realities. Trust responsibilities should adhere to entire ecosystems, not just to artificially segmented components of them.

In addition, the public trust doctrine as this section has described it is confined primarily to state-owned resources.²⁴² Efforts to extend it to federal lands and resources have not succeeded and, in particular, “it has never been infused into the statutory and regulatory structure that now dominates the field of natural resources law” at the federal level.²⁴³ The Supreme Court referred to ownership of public lands in trust for the American people nearly a century ago.²⁴⁴ But in this and several other cases, the resort to trust language took the form of dicta or occurred in contexts that may limit the doctrine to narrowly prescribed circumstances. None of these cases involved the question of whether the trust doctrine operates as a constraint on federal power, as opposed to a source of governmental authority.²⁴⁵ As a result, as Professor Pearson has explained, the public trust doctrine “exists only nominally in federal law. . . . [I]n federal law, the doctrine effectively is a non-player,” so that the government can manage federal lands and resources “free and clear” of any common law-derived public trust duties.²⁴⁶

3. Statutory Federal Natural Resource Trusts

Despite the virtual absence of judge-made federal public trust law, federal natural

237. Plater et al., *supra* n. 226, at 1076.

238. Wood, *supra* n. 222, at 44–45.

239. See e.g. *Natl. Audubon Socy. v. Super. Ct.*, 658 P.2d 709 (Cal. 1983) (recognizing an affirmative duty to take the public trust into account in the planning and allocation of water resources); *Kelly v. 1250 Oceanside Partners*, 140 P.3d 985 (Haw. 2006) (recognizing counties’ affirmative duty to protect state coastal waters from stormwater pollution associated with development).

240. See Wood, *supra* n. 222, at 23.

241. Bradley Karkkainen, *Bottlenecks and Baselines: Tackling the Information Deficits in Environmental Regulation*, 86 Tex. L. Rev. 1409, 1442 (2008).

242. See Wood, *supra* n. 222, at 23.

243. See *id.*; Coggins & Glicksman, *supra* n. 25, at § 8:50 (concluding that “the much-debated public trust doctrine in federal natural resources law has had very little practical impact”).

244. *Light v. U.S.*, 220 U.S. 523, 537 (1911) (quoting *U.S. v. Trinidad Coal & Coking Co.*, 137 U.S. 160 (1890)) (“All the public lands of the nation are held in trust for the people of the whole country.”). See also *Knight v. U.S. Land Assn.*, 142 U.S. 161, 181 (1891) (declaring the federal government to be “the guardian of the people of the United States over the public lands”).

245. See Pearson, *supra* n. 229, at 175.

246. *Id.* at 174. Cf. Mary Christina Wood, *The Tribal Property Right to Wildlife Capital (Part I): Applying Principles of Sovereignty to Imperiled Wildlife Populations*, 37 Idaho L. Rev. 1, 65 (2000) (arguing that public trust “principles are so universal and transferable as an ‘attribute of government’ that courts have seemingly ample authority to recognize a trusteeship over wildlife held by . . . sovereigns [other than the states]”).

resource management is not completely devoid of trust relationships. The courts have not interpreted FLPMA and the NFMA as imposing trust-derived fiduciary duties on the multiple use agencies in their management of federal lands and resources. The use of trust doctrine in other federal land and resource contexts nevertheless may provide Congress with useful precedents in creating trust responsibilities for the BLM and the Forest Service.

A few lower court cases invoke trust language that is arguably derivative of statutory duties. A federal district court in California recognized the National Park Service's trust obligation in managing timber resources in Redwood National Park.²⁴⁷ Subsequent decisions have not relied on that case to impose affirmative duties that bind the agency in its management of that or other parks. Some courts have explicitly refused to recognize that the Park Service has any extra-statutory duties.²⁴⁸

The statutes and regulations governing ownership and management of Indian lands also create trust relationships between the United States and the tribes. The Supreme Court has recognized that these statutes and regulations

clearly give the Federal Government full responsibility to manage Indian resources and land for the benefit of the Indians. They thereby establish a fiduciary relationship Moreover, a fiduciary relationship necessarily arises when the Government assumes such elaborate control over forests and property belonging to Indians. All of the necessary elements of a common-law trust are present: a trustee (the United States), a beneficiary (the Indian allottees), and a trust corpus (Indian timber, lands, and funds). "[W]here the Federal Government takes on or has control or supervision over tribal monies or properties, the fiduciary relationship normally exists with respect to such monies or properties (unless Congress has provided otherwise) even though nothing is said expressly in the authorizing or underlying statute (or other fundamental document) about a trust fund, or a trust or fiduciary connection."²⁴⁹

The Court also has concluded that the federal government is liable in damages for the breach of its fiduciary duties because the right of an injured beneficiary to sue the trustee for damages resulting from a breach of the trust is a fundamental incident of a trust relationship, and liability for breach of fiduciary duties acts as a deterrent to the federal government's breach of its trust responsibilities to the tribes.²⁵⁰ The government's fiduciary responsibilities to the tribes include a duty to use reasonable care and skill in preserving trust property and to prevent waste of trust resources.²⁵¹ These responsibilities apply only to lands held by the federal government for the tribes, not to the multiple use lands managed by the Forest Service and the BLM.

Several federal pollution control statutes create explicit trust relationships. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)²⁵² requires the President to designate federal officials to "act on behalf of the public as trustees for natural resources" injured or destroyed by a release of hazardous

247. See e.g. *Sierra Club v. Dept. of the Int.*, 376 F. Supp. 2d 90 (N.D. Cal. 1974).

248. Coggins & Glicksman, *supra* n. 25, at § 8:50.

249. *U.S. v. Mitchell*, 463 U.S. at 224–25 (quoting *Navajo Tribe of Indians v. U.S.*, 624 F.2d 981, 987 (1980)) (citation omitted).

250. *Id.* at 226–27.

251. See *U.S. v. White Mt. Apache Tribe*, 537 U.S. 465, 475, 479 (2003).

252. 42 U.S.C. §§ 9601–9675 (2006).

substances.²⁵³ The trustees are authorized to assess damages for injured natural resources over which they have management responsibility and, in conjunction with the Department of Justice, to seek recovery of those damages from parties responsible for the release.²⁵⁴ Natural resource trustees also may issue administrative cleanup orders.²⁵⁵ EPA regulations designate the Interior Department (including the BLM) as trustee for lands managed by that agency and the Department of Agriculture (including the Forest Service) as trustee for the national forests.²⁵⁶ Trust authority and responsibility under CERCLA only extends to lands and resources adversely affected by a release of hazardous substances. The Oil Pollution Act creates similar trust relationships for natural resources injured, lost, or destroyed by oil spills, with similar jurisdictional limitations.²⁵⁷

It is possible to construe the statutes that currently govern Forest Service and BLM management decisions to impose trust duties on the two agencies. The NFMA defines the National Forest System as a series of units “united into a nationally significant system dedicated to the long-term benefit for present and future generations.”²⁵⁸ One way to interpret that provision is to construe it as placing the lands that compose the National Forest System into a trust that is dedicated to the benefit of present and future generations of Americans. The substantive provisions of the NFMA providing management directives to the Forest Service make that agency the trustee. But there is no judicial support for this interpretation of the NFMA. The courts have cited the relevant provision in only three cases and have never relied on it in resolving any substantive issue.²⁵⁹

It is harder to derive a trust relationship from the provisions of FLPMA. The statute defines “multiple use” as “the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; . . . a combination of balanced and diverse resource uses that takes into account the long-term needs of *future generations* for renewable and nonrenewable resources”²⁶⁰ This provision arguably creates a trust over the public lands within the BLM’s jurisdiction. The BLM is the trustee responsible for managing those lands for the identified trust beneficiaries. But the provision is only a definitional one and lacks the language of creation and obligation that would likely have appeared if Congress had intended to create a trust.

One final candidate for the creation of trust duties that cover the federal lands, including the multiple use lands, is NEPA. NEPA declares the federal government’s policy “to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present

253. *Id.* at § 9607(f)(2)(A).

254. *Id.* at § 9607(a)(1)–(4)(C), (f)(1).

255. Exec. Order 13016, 61 Fed. Reg. 45871 (Aug. 28, 1996).

256. 40 C.F.R. § 300.600(b)(2)–(3) (2008).

257. 33 U.S.C. § 2706 (2006). *See generally* Coggins & Glicksman, *supra* n. 25, at § 19:32.

258. 16 U.S.C. § 1609.

259. *Mont. Wilderness Assn. v. U.S. Forest Serv.*, 655 F.2d 951, 954 (9th Cir. 1981); *Fund for Animals, Inc. v. Thomas*, 127 F.3d 80, 81 n.1 (D.C. Cir. 1997); *Cleveland v. U.S.*, 546 F. Supp. 2d 732, 738–39 (N.D. Cal. 2008).

260. 43 U.S.C. § 1702(c) (emphasis added).

and future generations of Americans.”²⁶¹ The Act also establishes

[a] continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may—(1) fulfill *the responsibilities . . . as trustee of the environment for succeeding generations*; . . . (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice; . . . and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.²⁶²

That provision arguably creates duties such as those imposed on trustees, explicitly identifies the federal government as a trustee of the environment, and designates succeeding generations as the trust beneficiaries. Finally, NEPA “directs that, to the fullest extent possible, . . . the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in” NEPA.²⁶³ Putting the statutory caveat (“to the fullest extent possible”) aside, NEPA appears to require federal agencies to implement their organic statutes in a manner consistent with NEPA policies, including the protection of the interests of future generations. Under this reading, the Forest Service and the BLM are obliged to administer the multiple use, sustained yield provisions of their organic statutes in a manner that fulfills the trust responsibilities created in NEPA. Given the Supreme Court’s continuing refusal to recognize any substantive duties in NEPA’s provisions,²⁶⁴ however, it is almost inconceivable that the Court would endorse an interpretation of NEPA that makes it an overlay statute that affects the substantive responsibilities of all federal agencies.

4. Sustainable Development, the Intergenerational Trust, and International Environmental Law

One further body of environmental law provides a basis for the creation of natural resource trusts whose function is to preserve ecological integrity and protect intergenerational equity. This section discusses the role of natural resource trusts in international law, particularly the international treaties and conventions bearing on sustainable development. It concludes that although international environmental law may create natural resource trusts under which national governments are obliged to preserve ecological integrity, both the existence and scope of such trusts are disputed. The international law version of sustainability is therefore insufficient to impose on the United States and the federal land management agencies a trust obligation to preserve

261. 42 U.S.C. § 4331(a).

262. *Id.* at § 4331(b) (emphasis added).

263. *Id.* at § 4332(1).

264. See e.g. *Winter v. Nat. Resources Def. Council, Inc.*, 129 S. Ct. 365, 376 (2008); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (stating that “it is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process”); *Strycker’s Bay Neighborhood Council, Inc. v. Karlen*, 444 U.S. 223, 227–28 (1980); *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976). But cf. Jason Czarnecki, *Revisiting the Tense Relationship between the U.S. Supreme Court, Administrative Procedure, and the National Environmental Policy Act*, 25 Stan. Envtl. L.J. 3, 4 (2006) (contending that “the APA potentially endows NEPA with a substantive force that courts have not acknowledged in NEPA itself”).

ecological integrity and protect intergenerational equity.

The conception of the earth and its natural resources as the res of a trust goes back decades. In the early 1970s, economist E.F. Schumacher criticized society's "failure to distinguish between income and capital where this distinction matters most . . . : namely, the irreplaceable capital which man has not made, but simply found, and without which he can do nothing."²⁶⁵ Schumacher supported efforts to minimize the current rate of use of natural resources and urged that income derived from the use of non-renewable resources such as oil and gas "be placed into a *special fund* to be devoted exclusively to the evolution of production methods and patterns of living which do *not* depend on fossil fuels at all or depend on them only to a very slight extent," so that future generations may thrive even when those resources run out.²⁶⁶

The application of trust principles to the goal of sustainable natural resource use was fleshed out more fully in Edith Brown Weiss's 1989 book, *In Fairness to Future Generations*.²⁶⁷ Professor Weiss regarded each generation as the recipient of "a natural and cultural legacy in trust from previous generations [which it] holds [] in trust for future generations."²⁶⁸ She argued that this trust relationship imposes on each generation

certain planetary obligations to conserve the natural and cultural resource base for future generations and also gives each generation certain planetary rights as beneficiaries of the trust to benefit from the legacy of their ancestors. These planetary obligations and planetary rights form the corpus of a proposed doctrine of intergenerational equity, or justice between generations.²⁶⁹

The problem of intergenerational equity arises because the interests of future generations tend to be ignored when resource use decisions, and the trade-offs they involve, are made. If the present generation depletes a non-renewable resource such as oil, future generations will not be able to enjoy the benefits currently derived from that resource.²⁷⁰ Even if the present generation does not use up a resource entirely, its price rises as it becomes scarcer. Future generations may be able to develop substitutes for scarce or depleted resources, but the price of developing them may be much higher than the price of the original resource would have been had it not been depleted.²⁷¹

Accordingly, Professor Weiss argues that the current generation should be subject

265. E.F. Schumacher, *Small Is Beautiful* 14 (Harper Perrenial 1989).

266. *Id.* at 15 (first emphasis added, second emphasis in original). Schumacher's book has been called "arguably one of the hundred most influential books published since the Second World War." Burns H. Weston, *Living History Interview with Bessie Dutton Murray Distinguished Professor of Law Emeritus and Director of the University of Iowa Center of Human Rights*, 11 *Transnatl. L. & Contemp. Probs.* 431, 460 (2001). *Cf.* Dean B. Suagee, *The Application of the National Environmental Policy Act to "Development" in Indian Country*, 16 *Am. Indian L. Rev.* 377, 432 (1991) (describing Schumacher's "classic work" as "a source of inspiration to many in the appropriate technology movement."). *But see* Jim Chen, *Globalization and its Losers*, 9 *Minn. J. Global Trade* 157, 202 (2000) (characterizing "small is beautiful" ideology as "malign"); Roderick M. Hills, Jr., *Romancing the Town: Why We (Still) Need a Democratic Defense of City Power* 113 *Harv. L. Rev.* 2009, 2026 n.44 (2000) (citing Schumacher's book as an example of "small-is-beautiful sentimentality").

267. Weiss, *supra* n. 210.

268. *Id.* at 2.

269. *Id.*

270. *Cf. id.* at 3 (noting that "the present generation may benefit from using these resources at the expense of future generations").

271. *Id.* at 7-8.

to a duty, or a series of duties, to engage in sustainable natural resource use:

For renewable resources such as fauna, flora, soils and water, the essence of the planetary duty is to develop and use them on a sustainable basis. For endangered species of fauna and flora, this may lead to stringent methods of protection, as by prohibiting trade in them. For certain unique natural resources, it may mean preservation of them in their present form. But for most renewable resources, it means that they can be developed and used for the benefit of present generations in any manner consistent with their renewal and hence availability for future generations.²⁷²

The duties could be translated into fairly specific mandates. Sustainable development of renewable resources such as water, for example, “requires that they not be exploited in excess of recharge rates.”²⁷³

Professor Weiss relied on analogies to domestic property and trust law to explain the nature of the planetary trust and the rights and obligations it created. She noted, for example, that among the “[m]any useful analogies in domestic legal systems” is the principle that although beneficiaries of a common law charitable trust may enjoy the benefits of the trust, they are obliged not to dissipate its corpus for future beneficiaries.²⁷⁴ She found the concept of equality among generations to be consistent with “the underlying premises of tenancy, stewardship and trusteeship: the assets must be conserved, not dissipated, by those responsible for them so that those coming after receive equal assets.”²⁷⁵ Professor Weiss developed a series of principles of intergenerational equity that could implement the Brundtland Commission’s plea for sustainable development. The principles were “intended to ensure equitable access to our planetary natural and cultural environment and at the same time to recognize limits on how we use our environment so we can pass it to future generations in as good

272. Weiss, *supra* n. 210, at 50–51.

273. *Id.* at 127. Following Professor Weiss’s lead, others turned to the trust concept as an explanation for the principle of sustainable development. See, e.g., Catherine Redgwell, *Intergenerational Trusts and Environmental Protection* 7 (Juris Publ. 1999) (“The explicitly intergenerational character of the concept of sustainable development—development in the present without jeopardizing the ability of future generations to meet their needs—is reflected in trust doctrine, whether through the standing of future generations to challenge non-sustainable use or the establishment of a trust fund to compensate future generations for resource depletion.”); Francis N. Botchway, *The Context of Trans-Boundary Energy Resource Exploitation: The Environment, the State, and the Methods*, 14 Colo. J. Intl. Envtl. L. & Policy 191, 219 n. 190 (2003) (“Constructive trust comes closest to the discussion on sustainable development, as the present generation holds the natural resource in trust for themselves and for future generation.”); Jerry V. DeMarco, *Law for Future Generations: The Theory of Intergenerational Equity in Canadian Environmental Law*, 15 J. Envtl. L. & Prac. 1, 3–4 (2004) (citing other sources); Benjamin J. Richardson, *Enlisting Institutional Investors in Environmental Regulation: Some Comparative and Theoretical Perspectives*, 28 N.C. J. Intl L. & Com. Reg. 247, 310–11 (2002) (noting that “[t]rust law precedents, such as duties to safeguard trust principal and avoid speculative, risky investments, can be construed as congruous with sustainability precepts to preserve natural capital and act in a precautionary manner”).

274. Weiss, *supra* n. 210, at 17–18 (citing *Restatement (Second) of Trusts* §§ 176, 379 (1959)). Catherine Redgwell’s description of the “intergenerational trust” clearly reflected Anglo-American property and trust law terminology:

The essence of the trust concept is the separation of legal and beneficial ownership of property. As legal owner of the trust property, the trustee has management powers over the trust property, but subject to the duty, enforceable under the equitable jurisdiction of the courts, to exercise those powers for the exclusive benefit of the beneficiary who is the beneficial or equitable owner of the trust property.

Redgwell, *supra*, n. 273, at 8.

275. Weiss, *supra* n. 210, at 24–25.

condition as we received it.”²⁷⁶

Professor Weiss’s conceptualization of sustainable development as a kind of codification of an intergenerational trust mechanism provides a starting point for protecting intergenerational equity. But “[t]he challenge for policy-makers is to design institutional arrangements that can harness the insights of trust doctrine into practical standards for the conservation of environmental resources.”²⁷⁷ In practice, the codification of sustainable development principles in international environmental treaties and other documents has not yet coalesced into the kind of planetary trust envisioned by Professor Weiss.

The interpretation of sustainable development as the source of a trust obligation that benefits future generations has been controversial in the development of international environmental law. The existence, nature, and scope of the duties incurred by the present generation have all been subject to debate. During the negotiations that culminated in 1972 in the Stockholm Declaration,²⁷⁸ which “helped to lay the groundwork for the subsequent acceptance of the concept of sustainable development,”²⁷⁹ the U.N. Secretary General urged that the international community endorse the existence of an intergenerational trust relationship. The trust would recognize a “duty of all nations to carefully husband their natural resources and to hold in trust for present and future generations the air, water, lands and communities of plants and animals on which life depends.”²⁸⁰ Developing nations objected to any references to obligations, duties, or trusts because that language implied constraints on their development objectives that would infringe upon national sovereignty.²⁸¹ The opponents of the explicit recognition of a trust prevailed, so that the final version of Principle 2 of the Stockholm Declaration states weakly, in the passive voice, that “[t]he natural resources of the earth . . . must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate.”²⁸²

More than twenty years later, the United Nations Commission on Sustainable Development argued that the principle of intergenerational equity, referred to in documents such as Principle 3 of the Rio Declaration, reflects the existence of a trust in which the present generation is entitled to use the fruits of the Earth for their own benefit, while simultaneously being subject to a duty to preserve it for the benefit of

276. *Id.* at 39. The principles included conservation of options, conservation of quality, and conservation of access. *Id.* at 38. The first of the three options “shifts the burden of justification to those who would destroy these resources or exploit them on a basis that cannot be sustained.” *Id.* at 225.

277. Richardson, *supra* n. 273, at 310–11. See also Tarlock, *supra* n. 49, at 48 (“Enormous problems remain in working out what the precise duties stemming from [the fundamental international environmental ethic of the duty to conserve resources for future generations] are, but the core principle that we must restrain present consumption for the benefit of future generations is a powerful idea that runs counter to the longstanding Western belief in progress.”).

278. Report of the United Nations Conference on the Human Environment, Declaration of the United Nations Conference on the Human Environment, UN Doc. A/CONF.48/14/Rev.1 (June 16, 1972), 11 I.L.M. 1416 [hereinafter Stockholm Declaration].

279. David Hunter, James Salzman & Durwood Zaelke, *International Environmental Law and Policy* 171 (3d ed., Found. Press 2007).

280. G.F. Maggio, *Inter/Intragenerational Equity: Current Applications under International Law for Promoting the Sustainable Development of Natural Resources*, 4 Buff. Env’tl. L.J. 161, 203 (1997).

281. *Id.*

282. Stockholm Declaration, *supra* n. 278, at Principle 2. See Maggio, *supra* n. 280, at 203.

future generations.²⁸³ That interpretation is subject to dispute, however.

According to one expert, “[n]one of the extant international conventions dealing with conservation and sustainable development of natural resources have used the term ‘trust’ when referring to issues of ‘inter-’ or ‘intra-’ generational equity. Instead they have consistently employed the term ‘for the benefit of’ or similar language.”²⁸⁴

Even if the international law commitment to achieving sustainable development creates a trust, the nature of the fiduciary duties it creates are unclear. In particular, two competing versions of sustainability—weak and strong—create confusion about the nature of any natural resource trust duties recognized by international environmental law. According to Professor Kysar, for example, proponents of the weak versions of sustainability take the position that any “attempt to preserve a particular portfolio of natural capital assets for future generations poses an insurmountable empirical challenge that is destined to cause wasteful or paternalistic resource decision making.”²⁸⁵

Under the strong version of sustainability, natural resource use is limited to “ecologically determined conditions of sustainability,” such as exploitation of renewable resources “at a rate that can be repeated indefinitely, and depletion of nonrenewable resources at a rate equal to the rate of development of substitute resources.”²⁸⁶ They conceive of intergenerational equity as the source of “a duty not only to maintain the stock of useful capital in the aggregate, but also to ensure the integrity of vital ecological processes and the availability of particular kinds and amounts of natural resources.”²⁸⁷

5. The Inadequacy of Existing Law

The concept of a trust provides a theoretical framework around which to build a legal structure whose goal is achieving sustainable resource development and an equitable accommodation of the interests of present and future generations in the capacity to use and benefit from natural resources. Current laws, both domestic and international, provide the seeds for the creation of trust obligations that bind the Forest Service and the BLM to the protection of ecological integrity for the benefit of present and future generations. None of the bodies of law discussed in this section creates firm trust responsibilities of this sort, however. Trust doctrine nevertheless can be a valuable framework for enhancing the capability of the laws governing the lands and resources managed by the Forest Service and the BLM to achieve sustainability. The next section argues that a statutory trust mechanism applicable to the multiple use lands holds promise as a means of achieving sustainability in federal land management.

283. Edith Brown Weiss, *A Reply to Barresi’s “Beyond Fairness to Future Generations”*, 11 Tul. Envtl. L.J. 89, 96 (1997).

284. Maggio, *supra* n. 280, at 203–04.

285. Kysar, *supra* n. 8, at 2123. The advocates of weak sustainability do recognize the present generation’s duty to “support a nondeclining stream of utility” by assuring that “a portion of the proceeds from resource exhaustion actually was being reinvested in reproducible capital.” *Id.* See also *supra* n. 56.

286. Kysar, *supra* n. 8, at 2124–25 (emphasis omitted).

287. *Id.* at 2145. Kysar adds: “By its nature, sustainable development assumes some responsibility on the part of present generations to collectively identify an ecological baseline beyond which human economic activity that impairs ecosystem functioning should stop.” *Id.*

B. A New Federal Natural Resource Land Management Trust

The trust doctrines described in section A provide precedents and potential models for the creation of trust relationships governing the multiple use lands, though none of those doctrines has yet been applied to those lands in comprehensive fashion, either by Congress or the courts. This section relies on those models and concepts of natural resource trusteeship and intergenerational equity to argue that Congress should create trusts to govern management of the multiple use federal lands. It describes the nature of the trusts, why trust concepts provide a more reliable mechanism for protecting ecosystem integrity than the current multiple use statutes do, and how the trusts may be enforced. Section C provides examples of the specific management obligations that Congress might impose on the Forest Service and the BLM to achieve sustainable land and resource use, as this Article has conceptualized it.

1. A Natural Resource Trust for Sustainability of the Multiple Use Lands

The trust doctrines explored in section A above provide a model for protecting ecosystem integrity on the multiple use federal lands in a way it is not currently protected.²⁸⁸ Congress should amend the organic statutes of the Forest Service and the BLM by creating a trust to govern management of the multiple use lands, designating those two agencies as the trustees responsible for managing the resources entrusted to their care, designating present and future generations of the American people as the beneficiaries of the trust, and authorizing citizen suits to enforce the trust by representatives of trust beneficiaries if the Forest Service or the BLM is alleged to have violated trust duties, such as by engaging in or allowing waste of trust resources.

The purpose of the sustainability trusts should be to prevent the Forest Service and the BLM from using or authorizing the use of the corpus, or “capital” of the trust, instead of just the “income” the trust res generates. E.F. Schumacher concluded that, since World War II, “we have indeed been living on the capital of living nature . . . [in] alarming proportions.”²⁸⁹ In particular, he bemoaned our failure to recognize that we have been “using up a certain kind of irreplaceable capital asset, namely the *tolerance margins* which benign nature always provides.”²⁹⁰ According to Schumacher, the modern industrial system “lives on irreplaceable capital which it cheerfully treats as income.”²⁹¹ Schumacher evocatively suggested, for example, that “a population basing its economic life on non-renewable fuels is living parasitically, on capital instead of income.”²⁹² More recently, Professor Kysar has noted that, “[t]o most proponents of

288. Mary Wood has argued that “[w]hile ideally Congress would address the ecological crisis through a new set of trust-oriented statutes geared to solving the systemic problems, thus far Congress has passively abdicated responsibility.” Wood, *supra* n. 222, at 52.

289. Schumacher, *supra* n. 265, at 18.

290. *Id.* at 19 (emphasis in original).

291. *Id.* at 21.

292. *Id.* at 64. Schumacher added:

Such a way of life could have no permanence and could therefore be justified only as a purely temporary expedient. As the world’s resources of non-renewable fuels—coal, oil and natural gas—are exceedingly unevenly distributed over the globe and undoubtedly limited in quantity, it is clear that their exploitation at an ever-increasing rate is an act of violence against nature which must almost inevitably lead to violence between men.

sustainable development, intergenerational equity in practice entails a duty not only to maintain the stock of useful capital in the aggregate, but also to ensure the integrity of vital ecological processes and the availability of particular kinds and amounts of natural resources.”²⁹³

Any statutory or regulatory provisions explicating the duty to manage sustainably by protecting ecological integrity, such as those provided in section C below by way of example, would essentially elaborate on this prohibition on invading the capital of the multiple use lands trusts and provide judicially enforceable measures of sustainable and non-sustainable resource use. Agency actions that invade resource “capital” should be deemed to amount to impermissible waste and therefore a breach of agency fiduciary duties.²⁹⁴ Preservation of natural resource capital would require maintenance of healthy ecosystems and of their ability to provide a continuing flow of ecosystem services for both present and future generations.²⁹⁵

The multiple use statutes already require the Forest Service and the BLM to integrate biological and other scientific information into their decision making processes,²⁹⁶ give priority to areas of critical environmental concern,²⁹⁷ and exclude certain uses entirely from portions of the multiple use lands.²⁹⁸ FLPMA declares a policy favoring land management that protects the quality of ecological and environmental resource values and that, “where appropriate,” “preserve[s] and protect[s] certain public lands in their natural condition.”²⁹⁹ The NFMA requires that Forest Service planning guidelines insure consideration of the environmental aspects of renewable resource management³⁰⁰ and “provide for [the] diversity of plant and animal communities.”³⁰¹ Each of these provisions has the potential to contribute to the protection of ecosystem integrity. The difficulty with relying on these provisions to protect the “capital” of the multiple use lands is that they are all precatory,³⁰² conditional,³⁰³ constrained by the applicability of the insufficiently protective standards of the MUSY,³⁰⁴ or otherwise replete with discretionary authority that has been delegated to the agencies. The NFMA’s diversity requirement, which is among both the more specific and environmentally protective provisions of the two statutes, is illustrative. The Ninth Circuit recently emphasized the courts’ obligation to defer to the Forest Service’s judgment in applying that provision because it invokes the need for the agency’s high level of technical expertise. Any other result, the court concluded, would

Id. at 64–65.

293. Kysar, *supra* n. 8, at 2145.

294. *Cf.* Wood, *supra* n. 222, at 44 (arguing that a duty to protect natural resource assets under the public trust doctrine “is also a duty to prevent waste to those assets”).

295. *See id.* at 44–45. *See also id.* at 59 (arguing that “[t]he driving factor in establishing a fiduciary standard is [protecting] the asset’s capacity to sustain and replenish itself”).

296. *E.g.* 16 U.S.C. § 1604(b); 43 U.S.C. § 1712(c)(2).

297. 43 U.S.C. § 1712(c)(3).

298. *Id.* at § 1712(e)(1).

299. *Id.* at § 1701(a)(8).

300. 16 U.S.C. § 1604(g)(3)(A).

301. *Id.* at § 1604(g)(3)(B).

302. *E.g.* 43 U.S.C. § 1701(a)(8).

303. *E.g. id.*; 16 U.S.C. § 1604(g)(3)(B) (“to the degree practicable”).

304. *E.g.*, 16 U.S.C. § 1604(g)(3)(B).

exceed the scope of judicial authority to review agency determinations under the arbitrary and capricious standard.³⁰⁵

As Mary Wood has recognized, one major distinction between asset management under statutory delegations such as the ones under which the Forest Service and the BLM now operate and management pursuant to the fiduciary duties imposed by trusts is the degree of deference accorded the asset manager. Under statutes such as FLPMA and the NFMA, judicial review historically has been highly deferential.³⁰⁶ In the trust context, the courts tend to engage in “aggressive judicial scrutiny.”³⁰⁷ The courts have recognized the need for such aggressive review in cases involving the government’s alleged breaches of the Indian land trusts.³⁰⁸

2. Enforcement of Trust Obligations

The imposition of statutory trust duties to manage federal lands and resources in a manner that avoids invasion of principal by preserving the capacity of federal lands and resources to continue supplying the full range of ecosystem services naturally available will not have its intended impact unless it is enforceable.³⁰⁹ The traditional methods of congressional and executive branch oversight would provide some constraints on any attempts by the agencies to deviate from their mandate to manage sustainably or from more specific statutory mandates such as those explored in section C below.³¹⁰ So would provisions of the Administrative Procedure Act authorizing persons adversely affected by final agency actions to sue the agencies, and authorizing the courts to reverse arbitrary and capricious decisions.³¹¹ But for the reasons discussed in section B.1 of Part III above, arbitrary and capricious review historically has been a relatively blunt instrument in efforts by public land users to constrain agency management of lands

305. *Lands Council v. McNair*, 537 F.3d 981, 992 (9th Cir. 2008). The court in *McNair* overruled its own NFMA diversity provision precedents (*Ecology Ctr., Inc. v. Austin*, 430 F.3d 1057 (9th Cir. 2005), *cert. denied*, 127 S. Ct. 931 (2007); *Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146 (9th Cir. 1998)), in which it regarded judicial review as overly intrusive. The *McNair* court characterized the *Austin* case as one in which it had “defied well-established law concerning the deference we owe to agencies and their methodological choices.” *McNair*, 537 F.3d at 991.

306. See Mary Christina Wood, *Law and Climate Change: Government’s Atmospheric Trust Responsibility*, 38 *Env’tl. L. Rep.* 10652, 10657 (Sept. 2008) (arguing that if a new natural resource management law is “pressed through the discretion frame, the government will continue to impoverish our natural resources until society can no longer sustain itself”).

307. Wood, *supra* n. 222, at 60. Aggressive scrutiny is appropriate in circumstances in which a land management agency allegedly violates its duty of loyalty by serving private interests instead of the interests of the American people as a whole or its duty not to waste trust assets. See *id.* at 24 (arguing that “[t]he core of the [public trust] doctrine requires trust management for public benefit rather than private exploit”); *id.* at 25 (arguing that trustees may not allocate rights to destroy public trust assets); *id.* at 48 (“When a trustee official uses his or her office to favor industry friends to the detriment of the public trust, the duty of loyalty is breached.”).

308. See e.g. *Seminole Nation v. U.S.*, 316 U.S. 286, 297 (1942) (referring to “the most exacting fiduciary standards”); *Jicarilla Apache Tribe v. Supron Energy Corp.*, 728 F.2d 1555, 1563 (10th Cir. 1984) (stating that where the Interior Secretary “is obligated to act as a fiduciary . . . his actions must not merely meet the minimal requirements of administrative law, but must also pass scrutiny under the more stringent standards demanded of a fiduciary”).

309. Cf. Weiss, *supra* n. 210, at 87 (arguing that intergenerational equity will not be achieved until natural resource trust obligations are translated into enforceable obligations).

310. For brief discussion of some of those oversight mechanisms, see Robert L. Glicksman et al., *Environmental Protection: Law and Policy* 208–21 (5th ed., Aspen 2007).

311. 5 U.S.C. §§ 702, 704, 706(2)(A) (2006).

administered under the current versions of FLPMA and the NFMA.

This Article supports the adoption of a citizen suit provision authorizing representatives of trust beneficiaries to sue to enjoin breaches of natural resource trust obligations. One potential obstacle to the creation of a workable citizen suit provision is the standing doctrine derived from the “Case or Controversy” clause of Article III of the Constitution.³¹² Unless a plaintiff has standing to sue, a suit brought in federal court is not justiciable. That obstacle should not prove insurmountable, however.

Under private property and trust law, trust beneficiaries are entitled to sue trustees for breach of fiduciary duty.³¹³ When trust beneficiaries are numerous, a guardian or representative can be appointed to protect their interests.³¹⁴ The need for representation of the unborn is reflected in some state statutes, which provide that unborn future interest holders may not be bound by judicial decisions affecting use of the property by present possessors unless their interests are represented in the litigation by a guardian *ad litem* or similar person to protect their interests.³¹⁵ The question is whether the constitutional or prudential constraints on standing allow individuals or groups purporting to represent trust beneficiaries, including both present and future generations of Americans, to bring suit to enforce trust duties against the Forest Service and the BLM.³¹⁶

As long as the individual (or group) acting as representative for present and future generations is able to show his or her own ability to meet constitutional standing requirements (or the ability of a member to meet those requirements if the plaintiff is a non-governmental organization), the answer should be yes. Generally, the Supreme Court requires that a litigant assert his or her own legal rights and interests, rather than resting a claim to relief on the legal rights or interests of third parties. The Court,

312. U.S. Const. art. III, § 2.

313. See Dukeminier et al., *supra* n. 220, at 239 (describing role of equity courts in enforcing trustee duties for the protection of trust beneficiaries).

314. Cf. Weiss, *supra* n. 210, at 96–97 (“Enforcement of planetary rights is appropriately done by a guardian or representative of future generations as a group . . .”); *id.* at 120 (recommending giving standing to a representative of future generations in judicial or administrative proceedings involving the management of trust assets); *id.* at 123 (encouraging states to recognize standing to guardians *ad litem* or other representatives of future generations).

315. See Powell, *supra* n. 212, at 283–84; *Restatement*, *supra* n. 214, at §§ 182–186 (specifying circumstances in which representation of unborn future interest holders is appropriate).

316. In other countries with different constitutional standing provisions, the courts have allowed such representational standing. The most renowned case is *Oposa v. Factoran*, G.R. No. 101083 (Sup. Ct. Phil. 1993) (available at http://www.lawphil.net/judjuris/juri1993/jul1993/gr_101083_1993.html). The suit was a class action brought on behalf of citizens of the Philippines to cancel timber licensing agreements entered into by the national government. The named plaintiffs, who were minors, purported to represent not only their own generation, but also unborn generations. They alleged constitutional and statutory violations. The court found

no difficulty in ruling that they can, for themselves, for others of their generation and for the succeeding generations, file a class suit. Their personality to sue in behalf of the succeeding generations can only be based on the concept of intergenerational responsibility insofar as the right to a balanced and healthful ecology is concerned. Such a right, as hereafter expounded, considers the “rhythm and harmony of nature.” . . . Such rhythm and harmony indispensably include . . . the judicious disposition, utilization, management, renewal and conservation of the country’s forest . . . and other natural resources to the end that their exploration, development and utilization be equitably accessible to the present as well as future generations.

Id. (text of the posted decision at nn. 9–10). Canada’s courts have recognized “public interest standing” in environmental cases. See *Friends of the Earth v. Can. (Gov. in Council)*, 2008 FC 1183, 2008 CarswellNat 3763 (Fed. Ct. Vancouver, B.C. Oct. 20, 2008) (finding that environmental group satisfied public interest standing because it had a genuine interest in the subject matter raised, it presented a serious issue, and there was no other reasonable and effective way to bring the matter before the court).

however, has recognized the right of litigants to bring actions on behalf of third parties if three criteria are satisfied:

The litigant must have suffered an “injury in fact,” thus giving him or her a “sufficiently concrete interest” in the outcome of the issue in dispute. . . ; the litigant must have a close relation to the third party . . . ; and there must exist some hindrance to the third party’s ability to protect his or her own interests.³¹⁷

Although the Court enunciated this third party standing test in a case involving a criminal defendant’s standing to raise the equal protection rights of a juror excluded from service, other courts have applied the test in civil suits analogous to the trust context at issue here. The Court recently recognized that “federal courts routinely entertain suits which will result in relief for parties that are not themselves directly bringing suit.”³¹⁸ It cited as examples trustees bringing suits to benefit their trusts and guardians ad litem bringing suits to benefit their wards.³¹⁹ In addition, the federal courts usually allow parents to sue on behalf of their minor children.³²⁰

It does not seem to be a great leap to allow third party standing to an individual purporting to represent the interests of present and future generations that are the beneficiaries of a trust encompassing federally owned lands and resources. Such an individual would have to show individual injury in fact, causation, and redressability in the usual manner required under the Supreme Court’s environmental standing precedents.³²¹ To demonstrate a close relationship with the present and future generation third parties the individual is representing, the plaintiff could argue, as Mary Wood has, that “[b]ecause the people have a direct stake in the future through their own life spans and those of the children born to their generation, the citizens’ present beneficial interest [in the preservation of trust lands and resources] inherently encompasses future concerns.”³²² Other scholars have made similar arguments.³²³

317. *Powers v. Ohio*, 499 U.S. 400, 410–11 (1991). One court explained the rationale for the exception to the normal third party standing prohibition this way: “Where right holders are unable to raise their own rights and their relationship with the plaintiff suggests an identity of interests, courts can be more certain that the litigation is necessary and that the issues will be framed clearly and effectively.” *Amato v. Wiletz*, 952 F.2d 742, 748 (3d Cir. 1991). *Amato* took the position that the three factors identified by the Supreme Court in *Powers* are not necessarily the only factors relevant to deciding whether third party standing is permissible. For example, “a suit between state governmental units may conflict with federal courts’ traditional federalism concerns about interfering with essentially state matters.” *Id.* at 750. In addition, third party standing rules may be relaxed in cases involving the First Amendment. See *IMS Health Inc. v. Ayotte*, 550 F.3d 42, 49 (1st Cir. 2008).

318. *Sprint Commun. Co. v. APCC Servs., Inc.*, 128 S.Ct. 2531, 2543 (2008).

319. *Id.*

320. See e.g. *Altman v. Bedford C. Sch. Dist.*, 245 F.3d 49, 70 (2d Cir. 2001).

321. E.g. *Friends of the Earth, Inc., v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167 (2000); *Lujan v. Defenders of Wildlife*, 504 U.S. 555 (1992). This would include the need to show an injury in fact that is temporally and geographically proximate to the challenged activity of the trustee. See *id.*; *Lujan v. Natl. Wildlife Fedn.*, 497 U.S. 871 (1990).

322. Wood, *supra* n. 222, at 27.

323. See e.g. Burns H. Weston, *Climate Change and Intergenerational Justice: Foundational Reflections*, 9 Vt. J. Envtl. L. 375, 406 (2008) (“If future interests can generate moral obligations to be fulfilled by present-day duty-bearers, it is also true that proxy or surrogate rights-holders, lawfully appointed, can cause future interests to be treated as legally recognized rights.” (emphasis in original)). Cf. *id.* at 384 (“In the ecological context (climate change of course included), there is no theoretically plausible reason why remote unborn persons should not be accorded deference in roughly the same manner as persons living today or soon to follow.”); *id.* at 389 (arguing that children are the representatives of future generations). Edith Brown Weiss has encouraged the recognition of “planetary rights” that are generational, group rights that encompass “rights

Finally, the hindrance to the ability of future generations to bring suit on their own behalf obviously lies in the fact that, by definition, they have not yet been born.³²⁴ As Professor Weiss has argued, the inability of future generations to assert their interests makes it “necessary to have some existing body [to] represent their interests in judicial proceedings.”³²⁵ Indeed, at least one court in an early environmental law case granted standing to an environmental group to represent the interests of future generations.³²⁶

C. Sustainability Standards for the Federal Lands

In contexts as diverse as the multiple use, sustained yield mandates that govern the Forest Service and BLM and the Brundtland Commission’s 1987 report, the pursuit of sustainable resource use and development has involved an effort to prevent present use from unfairly compromising future choice. Regardless of context, sustainability reflects a commitment to intergenerational equity.³²⁷ But recognition that the present generation is obliged to future generations to manage its natural resource use to avoid compromising future choice provides little guidance on the precise nature of the obligation in different settings.³²⁸

The organic statutes for the multiple use, sustained yield agencies have traditionally afforded the Forest Service and the BLM broad discretion to balance competing uses. The courts often have been loath to second-guess agency policy choices in light of that discretion. As a result, the existing framework for managing the multiple use lands risks providing inadequate protection of the interests of future generations. If Congress were to create a public lands trust under which the Forest Service and the BLM are obliged to protect ecological integrity, the courts would likely provide significantly less deference to the decisions of the trustee agencies than they do now. Congress should go beyond merely creating such a trust, however. In addition, it should redefine (or require the agencies to redefine) the management standards governing management of the trust lands and resources. These standards should be based on scientific information concerning the impact of various activities on the ability of various ecosystems to provide valuable services. They should require the agencies to avoid land and resource management that threatens the integrity of the ecological systems entrusted to their care by codifying the same kind of precautionary posture that characterizes the federal pollution control laws. As the author lacks the scientific expertise to draft such

to planetary conditions of diversity and quality comparable to those enjoyed by previous generations. . . .” Weiss, *supra* n. 210, at 96. She adds that remedies for violations of the rights of living individuals may often benefit the rest of the generation, thus retaining their character as group rights. *Id.* at 97.

324. The same argument applies to children of the present generation, who are incapable of suing to vindicate their own rights absent representation.

325. Edith Brown Weiss, *Conservation and Equity Between Generations*, in *Contemporary Issues in International Law: Essays in Honor of Louis B. Sohn* 245, 279 (Thomas Buergenthal ed., N.P. Engel 1984).

326. *Cape May Co. Ch., Inc., Izaak Walton League of Am. v. Macchia*, 329 F. Supp. 504, 514 (D.N.J. 1971) (suit to preserve marine resources by enjoining dredge and fill operations).

327. See Steven Dovers & Robin Connor, *Institutional and Policy Change for Sustainability*, in *Environmental Law*, *supra* n. 1, at 32 (contending that a central element of the concept of sustainability is achieving “a pattern of economic and human development that does not damage the opportunities for future generations to use natural resources and enjoy a healthy environment, while allowing for human development goals, especially for the world’s poor, to be met in the near term”).

328. See Weiss, *supra* n. 210, at 47 (stating that “the core value of intergenerational equity . . . has long played an important role in natural-resource law and policy”); Scientists, *supra* n. 2, at 14 (same).

standards, this section simply provides examples of the kinds of management standards that might be consistent with such a trust-based mandate to preserve ecological integrity for the benefit of present and future generations.

1. Codifying a General Sustainability Mandate

Federal land management agencies other than the Forest Service and the BLM already operate under statutory or regulatory mandates that prioritize the protection of ecosystem integrity. The National Park Service (NPS), for example, precludes approval of a plan of operations for mineral resource assessment activities in units of the National Park System in Alaska at which the federal government owns the surface estate but not the mineral rights if mineral extractions operations “would substantially interfere with management of the unit to ensure the preservation of its natural and ecological integrity in perpetuity, or would significantly injure the federally-owned or controlled lands or waters.”³²⁹

Similarly, the Fish and Wildlife Service (FWS) prepares conservation plans for national wildlife refuges that describe “the desired future conditions of a refuge . . .” and that seek to “restore[] the ecological integrity of each refuge and the Refuge System.”³³⁰ The FWS’s management regulations for the Northwestern Hawaiian Islands Marine National Monument allow issuance of permits to conduct activities in the Monument only if the agency finds, among other things, that an activity “can be conducted with adequate safeguards for the resources and ecological integrity of the Monument.”³³¹ Agency regulations define “ecological integrity” as “a condition determined to be characteristic of an ecosystem that has the ability to maintain the function, structure, and abundance of natural biological communities, including rates of change in response to natural environmental variation.”³³²

A trust-based set of sustainability standards for the multiple use lands should not provide that environmental concerns trump economic and social factors in every case. Instead, they should preclude projects or activities that pose a significant threat³³³ to the ecological integrity (using a definition such as the NPS definition quoted above) of the lands or resources encompassed by the trust. Activities that pose such threats are likely to adversely affect economic and social sustainability in the long run, even if they appear

329. 36 C.F.R. § 9.37(a)(3) (2008). *See also id.* at § 9.86(c)(1) (requiring that mineral operations “be designed to be carried out in an environmentally sound manner, as determined in appropriate environmental documentation, that: (1) Does not result in lasting environmental impacts that appreciably alter the natural character of the units or the integrity of the biological or ecological systems in the units”).

330. 50 C.F.R. § 25.12 (2008) (emphasis omitted).

331. *Id.* at § 404.11(d). In addition, activities must be conducted in a manner compatible with the purposes of the proclamation that created the Monument, considering the extent to which the activity may diminish the Monument’s ecological integrity, any indirect, secondary or cumulative effects of the activity, and the duration of such effects; “[t]he end value of the activity outweighs its adverse impacts on Monument resources, qualities, and ecological integrity”; and “[t]he methods and procedures proposed by the applicant are appropriate to achieve the proposed activity’s goals in relation to their impacts to Monument resources, qualities, and ecological integrity.” *Id.*

332. *Id.* at § 404.3 (emphasis omitted). *Cf.* 43 C.F.R. § 10005.19(a) (2008) (specifying “decision factors” that require projects under the Central Utah Project Completion Act, Pub. Law. No. 102-575, 106 Stat. 4600, 4625 (1992), to satisfy a “Biological Integrity” standard by, among other things, protecting, restoring, or enhancing “the ecological functions, values, and integrity of natural ecosystems supporting fish and wildlife resources”).

333. A standard that omitted the adjective “significant” would be more protective than the one in the text.

to promote economic productivity in the short run.³³⁴

2. Specific Sustainability Standards

More specific statutory standards or agency regulations should supplement the general obligation of the multiple use agencies to manage trust resources in a way that preserves ecological integrity.³³⁵ But the standards should not be so detailed and prescriptive that they divest the agencies of the flexibility they need to respond to changing conditions, unanticipated developments, and new knowledge.³³⁶ The aim should be to achieve the proper balance between the flexibility afforded by broad, discretionary mandates and the accountability provided by more specific, judicially enforceable standards.

One way to infuse specific content into a general mandate to protect ecological integrity is to identify a resource or set of resources that can serve as a surrogate for the condition of the ecosystem of which it is a part. The use of surrogates or proxies is commonplace in environmental and natural resource management laws.³³⁷ The Forest Service is experienced in the use of surrogates. The NFMA requires that land and resource management plans for units of the National Forest System provide for the protection of biological diversity.³³⁸ The Forest Service has used both management indicator species and the habitat of those species, with varying degrees of success, as surrogates for the diversity of the unit concerned.³³⁹ Similar surrogates may be available for the protection of ecological integrity in other contexts. Once the agency chooses surrogates, it should have to track their fate to adapt management techniques to ensure the continued vitality of those surrogates and the ecosystems they represent.

a. Certification Standards

Standards to protect ecological integrity need not necessarily be uniform; instead, they should vary with the context. The sustainability standards developed by two international certification bodies – one for forest protection and one for marine resource protection—illustrate the context-specific nature of sustainability standards.³⁴⁰ They also reflect several general principles that merit inclusion in any sustainability standards administered by the Forest Service and the BLM.

The Forest Stewardship Council (FSC) is a non-profit international organization

334. See *supra* nn. 161–162, 169 and accompanying text.

335. Dan Tarlock has identified two conditions that are necessary to the success of environmentally sustainable development: first, the embodiment of sustainability in a set of legal principles that constrain behavior, and, second, the creation of an institutional infrastructure to implement those principles. “Otherwise,” Tarlock notes, sustainability “will remain an unrealized aspiration.” Tarlock, *supra* n. 49, at 40.

336. Cf. Sen. Rpt. 93-686 (Feb. 18, 1974) (reprinted in U.S.C.C.A.N. 4060, 4075) (“Wise management is based upon facts and takes into account emerging, tested knowledge. Since we are constantly learning it would hardly be productive to try to cast into legislative fiat prescriptions for management.”); see also Glicksman, *supra* n. 124, at 469–71 (explaining the role of “bounded rationality” in natural resource management); Sidney A. Shapiro & Robert L. Glicksman, *Risk Regulation at Risk: Restoring a Pragmatic Approach* 22–24 (Stan. U. Press 2003).

337. See generally Glicksman, *supra* n. 124, *passim*.

338. 16 U.S.C. § 1604(g)(3)(B).

339. See Glicksman, *supra* n. 124, at 493.

340. Many thanks to Professor Andrew Torrance for introducing me to the role of international certification organizations in natural resource protection.

established in 1994 after the Rio Conference by a coalition of non-governmental organizations (NGOs) led by the World Wild Fund for Nature.³⁴¹ The FSC includes representatives of industry, environmental NGOs, and social justice NGOs.³⁴² The Council accredits organizations to certify private entities whose activities are found to be in compliance with the standards and criteria that describe sustainable forest management practices.³⁴³ Certification may allow businesses to charge a premium for timber managed in accordance with FSC standards and provide them with improved access to environmentally sensitive markets.³⁴⁴ The Marine Stewardship Council (MSC), an international non-profit organization whose goal is the achievement of well managed fisheries, operates on the same model. It creates environmental standards for a well-managed fishery. A certification that fish have been caught in a manner consistent with environmentally sustainable principles is designed to attract environmentally concerned consumers.³⁴⁵

341. Andrew Long, *Auditing for Sustainable Forest Management*, 31 Colum. J. Envtl. L. 1, 6–7 (2006).

342. Margaret M. Blair, Cynthia A. Williams & Li-Wen Lin, *The New Role for Assurance Services in Global Commerce*, 33 J. Corp. L. 325, 343 n.71 (2008) (citing Errol Meidinger, *The Administrative Law of Global Private-Public Regulation: The Case of Forestry*, 17 European J. Intl. L. 47, 51 (2006)). Its members elect representatives to sit on a three-chambered board (environmental, social, and economic), one of whose functions is to establish regional standards and criteria for sustainable forest management. Melissa Dorn, *Summary of the Conference on Global Environmental Governance*, 19 Geo. Intl. Envtl. L. Rev. 303, 311 (2007) (“The FSC, a nonprofit international organization, attempts to find solutions to problems created by bad forestry practices and to reward good forest management.”); Long, *supra* n. 341, at 7–8.

343. Forest Stewardship Council (“FSC”), *How FSC Policies and Standards Are Developed*, <http://www.fsc.org/fsc-rules.html?&L=0> (accessed Apr. 29, 2009) [hereinafter *Policies*] (“To earn FSC certification and the right to use the FSC label, an organization must first adapt its management and operations to conform to all applicable FSC requirements. What the FSC rules prescribe is implemented in forests around the world.”). See also *FSC Principles and Criteria for Forest Stewardship 2* (1996) available at http://www.fsc.org/images/documents/FSC_Principles_Criteria.pdf [hereinafter *Principles*].

344. *Policies*, *supra* n. 343. According to the FSC, the organization

uses certification to engage market dynamics in driving recognition for forests at large and in improving social and environmental standards in forest management practices worldwide. FSC standards ensure that these forests maintain the values and benefits they provide to society. By providing a market differentiation mechanism, FSC enables responsible forest managers to capture more value from their forests.

Id. The FSC has certified more than 175 million acres of forest worldwide. Dorn, *supra* n. 342, at 311.

345. Blair, Williams & Lin, *supra* n. 342, at 343 n.71. See also *Principles*, *supra* n. 343, at 2 (stating that “growing public awareness of forest destruction and degradation has led consumers to demand that their purchases of wood and other forest products will not contribute to this destruction but rather help to secure forest resources for the future,” and that, “[in] response to these demands, certification and self-certification programs of wood products have proliferated in the marketplace”). The Council describes the function of certification as follows:

On a voluntary basis, fisheries which conform to these Principles and Criteria will be eligible for certification by independent MSC-accredited certifiers. Fish processors, traders and retailers will be encouraged to make public commitments to purchase fish products only from certified sources. This will allow consumers to select fish products with the confidence that they come from sustainable, well managed sources. It will also benefit the fishers and the fishing industry who depend on the abundance of fish stocks, by providing market incentives to work towards sustainable practices. Fish processors, traders and retailers who buy from certified sustainable sources will in turn benefit from the assurance of continuity of future supply and hence sustainability of their own businesses.

Marine Stewardship Council (“MSC”), *MSC Principles and Criteria for Sustainable Fishing 1* (Nov. 2002) (available at http://www.msc.org/documents/msc-standards/MSC_environmental_standard_for_sustainable_fishing.pdf). “As of mid-2006, nineteen fisheries for Alaskan salmon, South African hake, and other fish had been certified, and seventeen more were undergoing full assessment.” Michael P. Vandenbergh, *The New Wal-Mart Effect: The Role of Private Contracting in Global Governance*, 54 UCLA L. Rev. 913, 923 (2007).

The FSC describes its sustainability principles and criteria (P & C) as “the highest social and environmental requirements in the forestry sector.”³⁴⁶ The ten principles and the fifty-six criteria that further define and explain them are explicitly designed to reflect intergenerational equity; they “describe how the forests have to be managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generations.”³⁴⁷ Similarly, the MSC’s P & C seek to achieve sustainable fisheries worldwide. The MSC defines a sustainable fishery, in part, as one that “maintains present and future economic and social options and benefits.”³⁴⁸ Principle 1 provides that “[a] fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations.”³⁴⁹ According to the MSC, “[t]he intent of this principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favour of short term interests.”³⁵⁰

Both institutions define sustainable resource management in terms of the protection of ecological integrity rather than solely by reference to the volume of commodities (harvested timber or fish caught). One FSC principle states that “[f]orest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.”³⁵¹ The accompanying criteria state that “[e]cological functions and values shall be maintained intact, enhanced, or restored, including: a) [f]orest regeneration and succession[;] b) [g]enetic, species, and ecosystem diversity[;] c) [n]atural cycles that affect the productivity of the forest ecosystem.”³⁵² Those functions and values can serve as surrogates for the protection of ecological integrity. The FSC’s P & C dictate that forest managers “where appropriate, enhance the value of forest services and resources such as watersheds and fisheries.”³⁵³

The MSC’s P & C also rely on the preservation of ecosystem integrity as a fundamental measure of sustainable fisheries. According to the MSC, “a sustainable fishery should be based upon . . . [t]he maintenance of the integrity of ecosystems.”³⁵⁴

346. *Policies*, *supra* n. 343. The P & C apply to all tropical, temperate, and boreal forests. *Principles*, *supra* n. 343, at 2.

347. FSC, *The FSC Principles and Criteria for Responsible Forest Management*, <http://www.fsc.org/pc.html> (accessed Apr. 29, 2009). See also *Principles*, *supra* n. 343, at 2. (“It is widely accepted that forest resources and associated lands should be managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generations.”).

348. MSC, *supra* n. 345, at 2.

349. *Id.* at 3 (emphasis omitted).

350. *Id.*

351. *Principles*, *supra* n. 343.

352. *Id.*

353. *Id.* The FSC also recognizes the interdependencies of environmental, social, and economic sustainability. One of its principles states that “[f]orest management should strive toward economic viability, while taking into account the full environmental, social, and operational costs of production, and ensuring the investments necessary to maintain the ecological productivity of the forest.” *Id.*

354. MSC, *supra* n. 345, at 1. In addition, a sustainable fishery should be based on “[t]he maintenance and re-establishment of healthy populations of targeted species” and “[t]he development and maintenance of effective fisheries management systems, taking into account all relevant biological, technological, economic, social, environmental and commercial aspects.” *Id.*

The regulations of the National Oceanic and Atmospheric Administration (NOAA) Fisheries promulgated under the Magnuson-Stevens Act are already geared toward the protection of ecological integrity to some degree. The Act is designed to prevent overfishing by achieving “optimum yield.” The latter is defined as the amount of fish that “[w]ill provide the greatest overall benefit to the Nation, particularly with

The MSC further defines a sustainable fishery as one that is conducted in such a way that “it maintains and seeks to maximise, ecological health and abundance” and “maintains the diversity, structure and function of the ecosystem on which it depends as well as the quality of its habitat, minimising the adverse effects that it causes.”³⁵⁵ Another principle provides that “[f]ishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.”³⁵⁶ To comply with the P & C, fishery management must maintain “natural functional relationships among species[, may] not lead to trophic cascades or ecosystem state changes,” “may not threaten biological diversity at the genetic, species or population levels,” and must “minimize mortality of, or injuries to endangered or protected species.”³⁵⁷

Finally, both the FSC and MSC P & C take the position that forest and fisheries management decisions should reflect a precautionary approach that is designed to err on the side of protecting the ecological integrity of the resources involved. The FSC P & C with SmartWood Indicators dictate that allowable harvests “be based on conservative, well-documented, and most current estimates of growth and yield.”³⁵⁸ The MSC places greater emphasis on precautionary management. It explains that its first principle, which prohibits overfishing, requires fishery managers to “provide margins of safety for error and uncertainty.”³⁵⁹ The P & C also provide that depleted fisheries be managed “consistent with the precautionary approach and the ability of the populations to produce long-term potential yields.”³⁶⁰ Depleted fisheries also must be rebuilt “to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame.”³⁶¹ Finally, Principle 3 requires effective management of fisheries, which includes decisions that are made “in

respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems.” 50 C.F.R. § 600.10(1) (2008).

355. MSC, *supra* n. 345, at 2. Alternative definitions of ecological integrity are available. The Committee of Scientists, for example, has proposed that:

[A]n ecosystem has ecological integrity when it can maintain characteristic compositions, structures, and processes against a background of anthropogenic changes in environmental conditions. Ecosystems with high ecological integrity continue to express the evolutionary and biogeographic processes that gave rise to the current biota; they have a species composition, diversity, and functional organization expected from natural habitats of the region; and they are resilient to environmental change and disturbance occurring within their natural range of variability.

Scientists, *supra* n. 2, at 34–35. The Committee also opined that “perhaps the single best metric of sustainable use of land is the persistence of species over time. The public needs to understand that the productivity of an ecosystem can be sustained over the long term only if species persist.” *Id.* at 40. It also stated its belief “that conserving habitat for native species and the processes of ecological systems remains the surest path to maintaining ecological sustainability.” *Id.* at 146.

356. MSC, *supra* n. 345, at 3. According to the FSC, the principle is meant “to encourage the management of fisheries from an ecosystem perspective under a system designed to assess and restrain the impacts of the fishery on the ecosystem.” *Id.*

357. *Id.* at 3–4.

358. Rainforest Alliance, *Rainforest Alliance/SmartWood Generic Standards for Assessing Forest Management* 5.6.2 (Jan. 16, 2008) (available at <http://www.rainforest-alliance.org/forestry/documents/smartwoodchinainterimstandardsjan08.pdf>).

359. MSC, *supra* n. 345, at 3.

360. *Id.* at 3.

361. *Id.*

a timely and adaptive fashion on the basis of the best available information using a precautionary approach particularly when dealing with scientific uncertainty.”³⁶²

The mandate that forest and fishery management be conducted in a precautionary manner is a long overdue recognition that natural resource management almost always takes place in an atmosphere of scientific uncertainty. The federal pollution control statutes adopted in the 1970s are precautionary in nature, seeking to prevent environmental harm before it occurs, if possible, rather than responding to environmental damage after the fact.³⁶³ The courts have consistently recognized the congressional mandate that EPA and other agencies charged with protecting the public health and safety err on the side of overprotection.³⁶⁴ The justifications for precautionary regulation in the pollution control context—including the existence of scientific uncertainty; the impossibility or difficulty of restoring environmental damage after it occurs; and a recognition that the harm resulting from an erroneous decision that regulation is not necessary to protect health, safety, or the environment will often be greater than the economic and social harm resulting from an erroneous decision that regulation is necessary—apply just as forcefully in the natural resource management context.

To some extent, the natural resource management agencies already recognize their duty to take a precautionary approach. Regulations governing management of the nation’s fisheries, for example, dictate that fisheries councils generally “should adopt a precautionary approach to specification of [optimum yield].”³⁶⁵ A precautionary approach would presumably manifest itself in somewhat different forms in the context of federal land management, but the fisheries regulations demonstrate that the duty to act in a precautionary manner have been and can be applied in the natural resource management context. Any statutory or regulatory overhaul of the legal framework for natural resource management by the Forest Service and the BLM therefore should mandate that the two agencies operate in a precautionary manner, pursuant to management constraints similar to those found in the FSC and MSC P & C.

In sum, the FSC and MSC efforts to achieve sustainable forest and fisheries management provide a model that should be applied to management of federal lands and

362. *Id.* at 5.

363. See e.g. *Ethyl Corp. v. EPA*, 541 F.2d 1, 13 (D.C. Cir. 1976) (interpreting § 211(c)(1)(A) of the Clean Air Act as a precautionary statute, and stating that “[a] statute allowing for regulation in the face of danger is, necessarily, a precautionary statute. Regulatory action may be taken before the threatened harm occurs; indeed, the very existence of such precautionary legislation would seem to demand that regulatory action precede, and, optimally, prevent, the perceived threat.”).

364. See e.g. *Interfaith Community Org. v. Honeywell Intl., Inc.*, 399 F.3d 248 (3d Cir. 2005) (interpreting the citizen suit provisions of the Resource Conservation and Recovery Act); *Am. Chemistry Council v. EPA*, 337 F.3d 1060 (D.C. Cir. 2003) (upholding regulations issued under the Resource Conservation and Recovery Act); *Lead Indus. Assn, Inc. v. EPA*, 647 F.2d 1130, 1155 (D.C. Cir. 1980) (holding that the Clean Air Act precludes EPA from considering cost in developing national ambient air quality standards and interpreting the legislative history to direct EPA “to err on the side of caution in making the necessary decisions”).

365. 50 C.F.R. § 600.310(5) (2008). The regulations identify three features of a precautionary approach in this context: (1) Target reference points, such as [optimum yield], should be set safely below limit reference points, such as the catch level associated with the fishing mortality rate; (2) A fish stock that is below the size that would produce maximum sustained yield should be harvested at a lower rate or level of fishing mortality than if the stock were above that size; and (3) “Criteria used to set target catch levels should be explicitly risk averse, so that greater uncertainty regarding the status or productive capacity of a stock or stock complex corresponds to greater caution in setting target catch levels.” *Id.*

resources by the Forest Service and the BLM. Several common components in particular can provide the foundation for sustainability of federal land and resource use. First, the multiple use agencies should be required to consider the long term as well as the short term; they should be obliged to protect the interests of future generations and ensure that their decisions do not preclude resource use choices that are available at present. Second, the preservation of intergenerational equity depends on the protection of ecological integrity. Thus, the agencies should have to justify resource management decisions as being consistent with the protection of ecological integrity, and they should be required to justify any surrogates they identify for that integrity. Third, the Forest Service and the BLM should be required to operate in a precautionary manner, taking a conservative approach to resource management when scientific uncertainty makes predictions of the impact of agency actions on ecological integrity difficult.³⁶⁶

V. CONCLUSION

Sustainable resource use has been enshrined as an important goal of domestic and international environmental and natural resource management laws for decades. Yet, as Dan Tarlock has pointed out, “the core principle that we must restrain present consumption for the benefit of future generations is a powerful idea that runs counter to the longstanding Western belief in progress.”³⁶⁷ The Forest Service and the BLM have long operated under sustained yield mandates. Those laws are susceptible to interpretations that prioritize commodity production that is easily expressed in quantitative terms. Perhaps more importantly, the sustained yield component of the multiple use, sustained yield statutes has done little to require the Forest Service or the BLM to adjust management priorities or methodologies in an effort to assure the availability to future generations of the full array of resource use options currently offered by the federal lands.

If the nation is committed to achieving sustainability on the federal lands, Congress should amend the NFMA and FLPMA. It should require the Forest Service and the BLM to factor sustainability into its decision making processes at every level, from plan formulation to site-specific implementation. It should define sustainability in terms of the preservation of ecological integrity.³⁶⁸ It should create a trust comprised of the lands and resources managed by the Forest Service and the BLM and authorize citizen suits to protect the interest of trust beneficiaries, including future generations of

366. The MSC P & C suggest a fourth building block for sustainable federal land use. The MSC requires that fishery management “provide economic and social incentives that contribute to sustainable fishing and . . . not operate with subsidies that contribute to unsustainable fishing.” MSC, *supra* n. 345, at 5. Both Congress and the agencies should cease providing incentives for actions that threaten ecological integrity and instead should structure their decisions so as to reward those whose actions contribute to the protection of ecological integrity.

367. Tarlock, *supra* note 49, at 48.

368. See e.g. Gillroy, Holland & Campbell-Mohn, *supra* n. 87, at 202–03 (“As long as ecosystem management requires more than concern for economic wealth generation, the distinct demands of multiple-use management and ecosystem management in the law can be resolved only through the creation of a distinct paradigm that places ecosystem integrity, or the non-use value of nature, as a core component of resource law.”). The authors support “a new emphasis on the ecological health and integrity of ecosystems, that is, on their resiliency, resistance, stability, elasticity, constancy, and persistence. These conditions of integrity are intrinsic functional concerns and are not part of the market-resource approach to environmental policy, which can only fully evaluate the use value of nature’s resources.” *Id.* at 208.

Americans. Finally, the statutes governing the two agencies should include (or require the Forest Service and the BLM to adopt) science-based management standards that are sufficiently concrete to be judicially enforceable and that require the agencies to take steps to protect the ecological integrity of the affected federal lands so that current use does not prevent present and future generations of Americans from enjoying the benefits of the ecosystem services now supplied by those lands.

